## DOPP Ex II Management Summary - Group 04

# 1 Key findings

### 1.1 Regional Dietary Patterns Show Clear North-South Divide

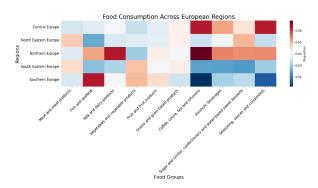


Figure 1: Enter Caption

The analysis reveals distinct dietary patterns across European regions. Southern Europe demonstrates healthier eating habits with high consumption of fruits, vegetables, and fish. This aligns with the well-known Mediterranean diet pattern and explains better health outcomes in these regions.

Northern and Central Europe shows higher consumption of processed foods, sugary products, and alcoholic beverages. This pattern correlates with higher obesity rates in these regions. The overconsuption of alcohol is also a well known factor in some of these regions which explains the patterns on the plot. Interestinly in the northern region all of the categories have a leratively large consumption which is probably correlated to the good economic status, on the contrary the central european countries tend to consume less healthy and mediterranean foods which can be explained by the lack of sea adn the worse buying power.

#### 1.2 Machine Learning Insights

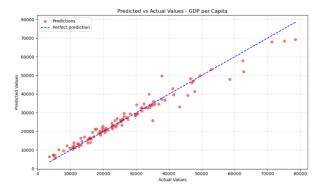


Figure 2: Enter Caption

Obesity Predictors: The most influential factors in predicting obesity rates are: Sugar and Processed Foods had the strongest positive correlation with obesity among all food categories which is in conclusion with our expectations. Vegetable and Fruit Consumption has a significant negative correlation with obesity rates, with a particularly strong effect in mediterranean countries where cultural and geographical factors can both influence the diet choices.

Some unexpected Correlations are that coffee/tea consumption showed surprising positive correlation with obesity. This is probably due to the fact that most people consume these beverages with milk and added sugar which is highly correlated with obesity as we already know.

Economic Indicators: Trade metrics can predict life expectancy and GDP per capita with 93 - 95 percent accuracy, suggesting strong interconnections between health, trade, and economic prosperity. This is a clear indicator of the complexness and interconnectedness of the seemingly unrelated fields.

#### 1.3 Critical cereal Trade Imbalance

. The European cereal trade reveals stark regional disparities: France dominates with export

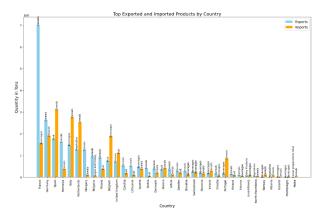


Figure 3: Enter Caption

volumes 2 times larger than its closest competitors, while Southern European nations (particularly Spain and Portugal) show critical import dependencies despite their agricultural heritage. This West-East divide in trade volumes, where Western European nations maintain sophisticated trading operations while Eastern European countries show minimal activity, suggests untapped agricultural potential. The concentration of trade power among a few Western nations, driven by technological advantages better economy, indicates both market inefficiencies and opportunities for Eastern European market development. In addition we can see that meats and meat preparations generate highest value on average despite lower volumes, which is also a potential investment opportunity for countries with weaker economy.

### 1.4 GDP and Food Consumption: A Complex Relationship

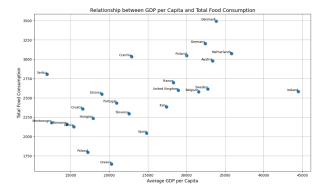


Figure 4: GDP per Capita vs food

Our analysis reveals a nuanced relationship between GDP per capita and total food consumption across European nations. The data shows a positive correlation up to €35,000 GDP per capita, with the strongest relationship observed in the €25,000-35,000 range, where countries like Italy, Spain, and Finland demonstrate peak consumption levels. Notably, countries above €35,000 GDP per capita show lower consumption patterns, suggesting a shift toward quality over quantity in wealthier nations. Important outliers highlight regional factors beyond wealth: Serbia maintains high food consumption despite lower GDP, while Poland and Greece not.