

Title: “A literature review on Front-of-Pack labels in Europe”

Among the policies that guide consumers towards healthier food choices, nutritional information-provision, and more specifically nutritional labelling, is considered to be fundamental. The main aim of nutritional labelling is to enable consumers to correctly evaluate the features of different food products and to compare them in order to make more informed and, potentially, healthier choices. Beyond mandatory labelling, which is already present in regulations of many countries worldwide, voluntary labelling is now at the heart of the international debate on nutritional labelling, specifically focusing on Front-Of-Pack labelling (FOPL).

While the US the FDA has announced the aim of establishing a standardized FOPL system and while South American countries are reaching a consensus on the final FOPL, in the EU the proposal of FOPL harmonization across EU countries has added fuel to the fire. Indeed, in the EU several are the proposed FOPL: among these, NutriScore, proposed by the French government, has been also adopted by Germany, the Netherlands, Spain, Belgium, and Luxembourg. This label is an evaluative, summary indicator label, characterised by five levels of “healthiness” ranging from A to E; colours are associated to each level, in a scale from green to red. The levels are calculated based on 100 grams of product. Other than informing consumers, one of the aims of this label is to push food companies to reformulate the ingredient lists of food products in order to make them healthier.

Its features are the reason why some countries, including Italy, strongly oppose this label. Indeed, these countries fear that levels ranging from A to E, green to red, based on 100 grams, portray a misleading interpretation of the nutritional quality of such products. Moreover, they argue that nutritional quality is not correctly accounted with the algorithm on which the NutriScore is based. The Italian government has therefore proposed another FOPL, the NutriInform Battery. It is a reductive, nutrient-specific label, which reports the information already present in the back of the packaging for some nutrients. A battery logo is also used to visualize to what extent each nutrient in a portion contributes to the daily-recommended intake. This label focuses on providing nutritional information to consumers. Denomination of Origin Products have been excluded from the application of this label, as their ingredient list cannot be changed, and FOPL could have an impact on presence of such products both on the national and international market.

Overall, the international interest for FOPL has gained the attention of researchers, who have been contributing greatly to the debate. However, while numerous studies are present in literature regarding the effects that FOPL have on consumers, from an understanding, acceptability, and purchasing perspective, lacking is the literature on the consequences that FOPL may have on the food industries and more generally on the supply side.

For this reason, the aim of the present study is to provide a comprehensive overview of the main demand-side and supply-side impacts of FOPLs.

Considering the demand side, a thorough analysis has been conducted focusing both on the theoretical studies and the empirical studies on FOPL.

The theoretical studies analysed are related to the mechanisms and heuristics on which FOPLs rely, discussing the cognitive responses that they trigger in consumers. Insights on the other variables that influence the process of food purchasing by consumers have also been explored, such as nutrition knowledge, numeracy, and literacy.

As for the empirical studies, a comprehensive overview of the experiments comparing two or more FOPLs present worldwide has been carried out, considering aspects such as consumer understanding and acceptability of FOPL, and FOPL effect on food purchasing. Differences in the manners in which the tasks have been proposed to consumers have been highlighted, together with the implications on the outcomes. An in-depth analysis has been carried out on the studies that compared the NutriScore and the NutriInform.

Overall, from the analysis of the studies on the demand side, no conclusions could be drawn on the most effective FOPL, as effectiveness can be intended from an understanding or an acceptability standpoint. Additionally, results of the studies analysed deeply depended on the way in which the tasks were formulated. However, evaluative FOPLs seem to perform better than reductive ones in understanding tasks, since the latter

require higher cognitive effort to be processed. Although there is a plentiful literature on the demand-side, gaps have emerged from the analysis. For example, future studies should include real-world studies, which could help establish the actual consequences of FOPL on food purchases.

Focusing on the supply side instead, the potential and the actual effects of the adoption of FOPL on the market were explored by examining the elements of the food industry that could favour or hinder the introduction of FOPL on the market. Since supply-side literature on FOPL is scant, theoretical economic literature on labelling has been analysed and extended to the FOPL issue. For example, their effect on market segmentation and on the differentiation effect on food products has been investigated.

Moreover, being one of the main objectives of the introduction of FOPL on the market, an extended insight was given to the effect of FOPL on reformulation, both from a theoretical and an empirical perspective. The expected outcome of an improved product formulation was not confirmed in the studies.

Difference in the competitive advantages obtained from the adoption of FOPL by retailers and manufacturers has also been analysed, explaining why retailers are more favourable towards FOPL compared to manufacturers. Furthermore, the majority of EU food industries is made of small firms, who have lower financial and technological capacity compared to large firms, and consequently less ability to reformulate their products. As a result, competitiveness of big manufacturers and retailers would increase to the detriment of small firms.

Overall, more empirical evidence is needed regarding the effect of FOPL introduction on prices, to evaluate the impact on food purchases and on exports, especially of Denomination of Origin Products. Additionally, from a policymaking perspective, mechanisms behind the attribution of FOPL to food products should be reconsidered and furtherly investigated in the light of the results obtained from the analysis on reformulation, in order to avoid causing inequalities and welfare losses.