

Comparative study of front-of-pack nutrition labels at global level, a social responsibility issue

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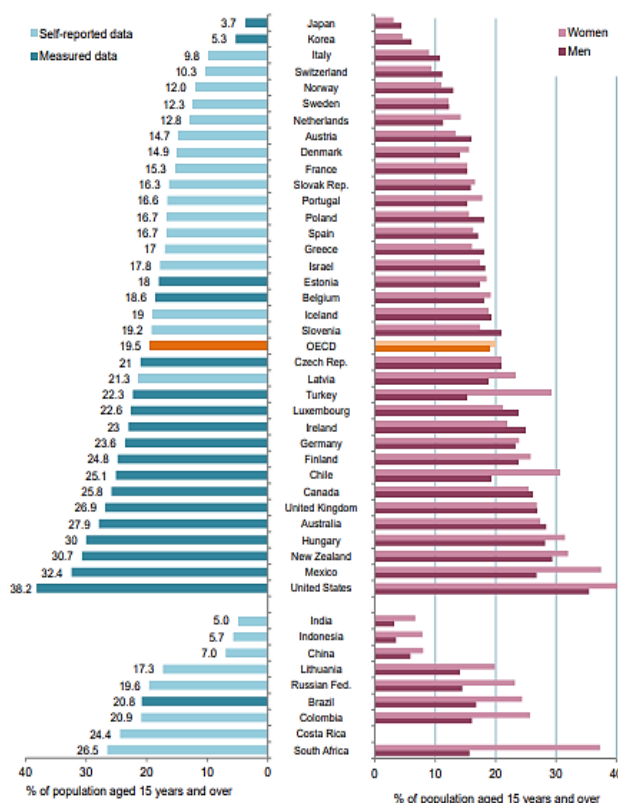
Abstract. *At the global level, there are many different front-of-pack nutrition labels and there is not yet established a convergence. To promote healthier food, Governments and manufacturers try to provide more nutritional information on food labels. Changes in food labeling policy depend on how consumers and companies react to changes in the market. The paper is based on the current regulations that exist worldwide. The analysis covered the period between 1980 and 2021. This study increases the attention of all stakeholders involved in the front-of-pack nutrition labelling debate. In this regard it is relevant to present the advantages and disadvantages, the similarities and the differences of front-of-pack nutrition labelling, because each one is unique, so it is hard to compare them by using the same criteria. The paper brings into the spotlights different policies from different countries that aim to educate the consumers about the content of food, the case of front-of-pack food labeling, that represents a social responsibility issue, especially for health and obesity prevention, non-communicable diseases, cardiovascular diseases, cancer, diabetes, due to the important role played. Our results show that there are key items, in terms of social responsibility, companies should take into account when planning their strategies and may help also the investors in food manufacturing companies with an increased interest in social information to request and understand the importance of the front-of-pack nutrition labelling of companies they want to invest in. It is important to understand the label of products that we buy, to be able to choose wisely. Our research is important for the business to advance in disclosure on the pack of food of relevant information, as well for the academic community regarding the front-of-pack nutrition labelling, as a responsibility issue. Future research is needed since there is a variety of front-of-pack nutrition labelling and is changing constantly.*

Keywords: social responsibility, food labels, front-of-pack food labeling, regulations.

Introduction

Obesity is a growing problem resulting from different factors including social, individual, environmental ones (Ogden et al., 2006; Draper et al., 2013). Obesity leads to increased risks for different chronic diseases, such as heart disease, cancer, diabetes (Kim and Popkin, 2005; Flegal et al., 2012). The availability of processed food is one of the main drivers of obesity and non-communicable diseases (Monteiro et al., 2012; Swinburn et al., 2011). In 2015, across the OECD (2017), 19.5% of the adult population was obese (Figure 1). This rate ranges from less than 6% in Korea and Japan to more than 30% in Hungary, New Zealand, Mexico, and the United States. More than one in four adults is obese in Australia, Canada, Chile, South Africa, and the United Kingdom. Overweight and obesity rates have grown rapidly in England, Mexico, and the United States since the 1990s. Over the past decade, the prevalence rate of overweight and obesity has increased in Canada, France, Mexico, Switzerland, and the United States, while it has stabilized in England, Italy, Korea, and Spain. There is, however, no clear sign of retrenchment of the epidemic, in any country, and one in six children is obese.

Figure 1: Obesity among adults, 2015 or nearest year



Source: OECD (2017), OECD Health Statistics 2017 (Forthcoming in June 2017).
www.oecd.org/health/health-data.htm
Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Figure 1. Obesity worldwide

Source: <https://www.oecd.org/els/health-systems/Obesity-Update-2017.pdf>.

The share of children who are overweight or obese at age 15 ranges from 10% in Denmark to 31% in the United States. Despite policies put in place in OECD countries for several years, the number of 15-year-olds who report being overweight or obese has steadily increased since 2000 in the majority of countries, according to the Health Behaviour in School-aged Children survey (Inchley et al., 2016).

The objective of the present paper is to compare the existing front-of-pack nutrition labelling, to increase the understanding of their use. In this way, we provide knowledge in terms of front-of-pack nutrition labelling, and also the transparency increases. Our research is important for the business to advance in disclosure on the pack of food of relevant information, as well for the academic community regarding the front-of-pack nutrition labelling, as a responsibility issue.

The paper is divided into 5 sections. Section 1 provides a literature review on the impact of food labeling regulations, section 2 provides information related to features of the front of pack food labeling, section 3 comprises the methodology, section 4 refers to results, discussions, and issues related to sustainability, personal and social responsibility and the way we are free to choose what to eat and the last section presents conclusions, recommendations, and future research directions.

Literature review on the impact of nutrition labeling regulations on food markets

US Food and Drug Administration (US FDA) educates the public on trans fat-free foods. The Nutrition Labeling and Education Act (NLEA) implemented in 1994 required disclosure on the packages calories, fat, cholesterol, sodium, carbohydrates, fibers, sugar, protein, vitamins, minerals. NLEA also regulated the voluntary use of some claims such as sugar-free, gluten-free, low fat. Researchers have been interested in the impact of the NLEA policy on product consumption (Huang et al., 2018; Huff et al., 2015; Caswell and Padberg, 1992; Zarkin and Anderson, 1992; Aldag and Stearns, 1991).

In Australia, food labeling standards are established by the Australia New Zealand Food Standards Code (Wang et al., 2016). To avoid bad nutrients, consumers read the nutrition labels of the products. Some researchers discovered that salad dressing has a high-fat level. Other researchers found that consumers understand food content (Ippolito and Mathios, 1994; Marietta et al., 1999; Barroso, 2013; Barnes et al., 2010). There are studies in Australia that demonstrated the negative impact of obesity on the human body. One quarter of osteoarthritis and diabetes and one-fifth of cardiovascular disease, colorectal, kidney, breast, uterine cancers have as the main cause of obesity. The problem is obesity rates rise also in children. The answer to obesity could be social responsibility or maybe personal responsibility. When implementing pack labeling we encourage healthier eating, but also some companies can have a decrease in revenues, due to the impact on purchasing. To prevent obesity, we should implement both personal and social responsibility, such as governmental policies (Murphy and Sanderson, 2017; Bratianu, 2013; Handsley et al., 2009; Brownell et al., 2009; Goetzl and Ozminkowski, 2008; Barnes et al., 2010; Andriessen, 2006).

Some authors reported that European legislation on nutrition helps consumers to choose wisely (Leathwood et al., 2007). Balcombe et al. (2010) discovered that UK consumers pay more to avoid foods with "red" nutrients. Barreiro-Hurlé et al. (2010) discovered that nutrition information influences the consumption of healthy foods, while other researchers discovered that the consumption of healthy food is not influenced by nutrition labeling (Wang et al., 2020; Wu et al., 2020; Zhu et al., 2020; Mojdzuska et al., 2001).

In November 2006 the Australian Food and Grocery Council AFGC launched the voluntary labeling named Daily Intake Labelling, used by 180 brands, that inform consumers regarding the sugar, energy, carbo, protein, fat, saturated fat, sodium per serve in a monochrome format.

There are some differences between Daily Intake Labelling and Traffic Light Labelling. The first one is more complex. Daily intake labeling provides information about the number of nutrients, not about the quality of nutrition. When serving a meal at a restaurant, consumers can not estimate the real amount of calories. They usually underestimate them, together with the level of fats and salt. There is a need in implementing such labeling also for restaurant menus to improve health and the diet.

The researchers (Lim et al., 2020) assessed the nutritional information of 21,096 products from 44 categories, representing 9.083 brands from 1996 to 2011. The authors evaluated the impact of voluntary FOPNL on the nutritional content of products. They compared the nutritional data of products before and after adopting FOPNL. The results revealed the link between FOPNL and changes in the nutritional content of products, because the brands improved nutritional quality in comparison with other products, the manufacturers produce less but with improved nutritional quality. Health and nutrition issues are very important in the current context. All stakeholders are

confused by FOPNL because they represent recommendations and are not implemented across all products. Still, they try to understand the information disclosed on the packages and they try to change attitudes.

Pandemic influenced the way we choose our food since worldwide restrictions are still in force and restaurants are closed, shops are changing their opening and closing hours, and physical distancing entered into force. We shop, cook, and eat differently. Health and nutrition represent an important issue in these special times. We focus on time- saving, on the availability of products, and we also use online shopping, rather than in-store.

It is important to understand the label of products that we buy, to be able to compare them and to choose wisely.

Methodology

The objective of the research is to present the history of front-of-pack-food labeling at the global level, which represents a social responsibility issue, in pandemic times. We realized this by conducting a literature review and by studying also the rules and regulations related to food systems, at the global level. In this regard, we try to determine if FOPNL received attention over time.

The research is focused on FOPNL implemented at the national level, not on ones used by different retailers (Figure 2).

After analyzing the literature on FOPNL we discovered there are some key issues to take into account when we start to compare the FOPNL (Table 1).

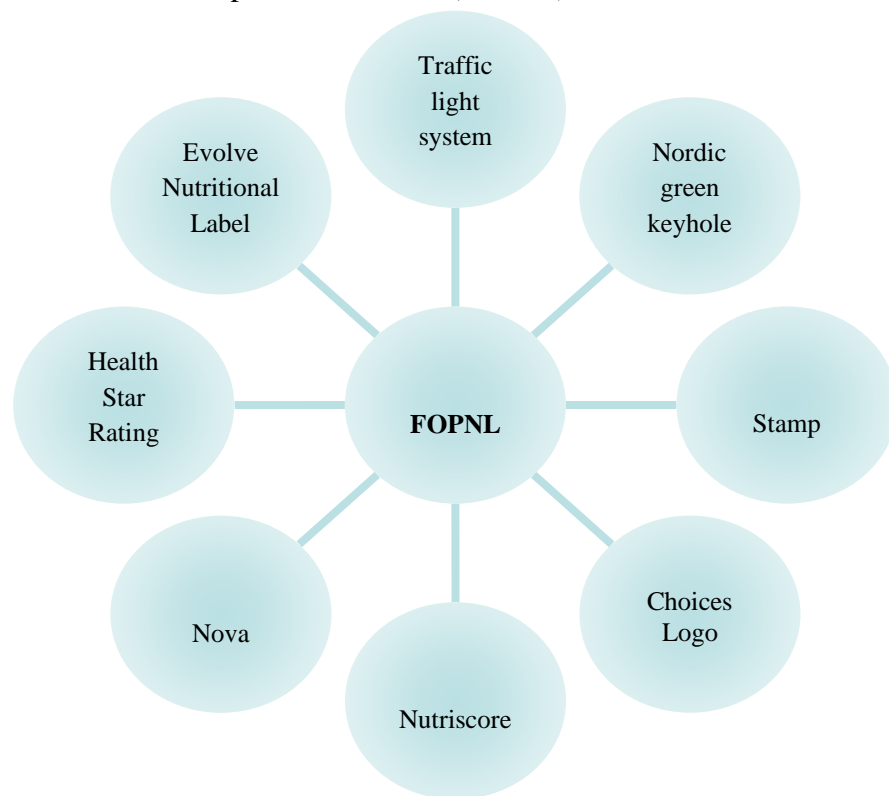


Figure 2. FOPNL implemented worldwide

Source: Author's own research, based on documentation.

Table 1. Items used to describe FOPNL

Item	Description
Category	FOPNL are developed for categories of products or a selection of products from a category
Component	FOPNL take into consideration the negative components of products, while the others take into account the positive components
Reference unit	100 g, 100 ml, 100 kcal/KJ serving, reference intake per day
Objective	To help consumers improve their healthy choices, to stimulate the production of healthy food
Driver	Commercials, Government, NGO
The tone of the voice	There are negative, positive, mixed FOPNL
Use	Voluntary or mandatory
Initiative	Public or private

Source: Author's projection, based on documentation.

Results and discussions

Within this paper we investigated the regulations that exist worldwide to motivate consumers to eat healthier products, we identified the key labeling models for packed products, we performed a literature review on existing studies on FOPNL, we mapped the current rules and regulations of FOPNL worldwide, we proposed recommendations to improve FOPNL and to encourage a unique FOPNL, we demonstrated that food labeling is protecting industry revenues, it is not seen like social responsibility, more like alignment to government regulations, we demonstrated that food labeling should not offend any company.

Manufacturers voluntarily display FOPNL nutrition information. According to the literature review carried out, we discovered that the first initiative of FOPNL was in 1980 when it started action on salt. In 1989 the keyhole was introduced in Sweden, a voluntary health logo. In 1992 Slovenia launched the protective food logo. In 1993 a high salt warning label and protective food logo was introduced. In 1998 healthier choice symbols were introduced in Singapore. In 2000 Finland launched the heart symbol. In 2004, UK, South Korea, Ecuador there was a color-coded labeling system, called the traffic light system that highlights the nutrition content of foods and drinks. Red light means high in fat, sugar, salt, amber means medium and green means low and a healthier choice. There are also labels that mix red, amber, and green. It is better to use a single-color labeling, to not confuse the customers. Under the UK traffic light label, launched by the Food Standards Agency, which is voluntary, an amber light is medium, a green light is considered a healthy choice, and a red light must be used with moderation. The system discloses each nutrient as a percentage of the daily recommended intake (DRI). In 2005 heart tick was launched in Nigeria. In 2006 in Australia, the DIG Daily Intake Guide of the FOPNL system was launched. In the same year, the UK improved the FOPNL, by implementing it for five nutrients (calories, sugar, fat, saturated fats, salt) renamed Reference Intakes label, the scheme being used across the EU. In 2007 Healthy choices was launched in Belgium and the Nordic green keyhole logo was developed by the Swedish National Food Agency, introduced first in Sweden, in 1989. It represents a food label and has a set of criteria for 33 product groups. In 2009, Denmark Norway Sweden, Iceland, Lithuania implemented the keyhole logo (for sugar, salt, fats, fiber, wholegrain), a voluntary manner, being free of charge label, and unused for low nutritional value products such as drinks and snacks. Netherlands's choices logo has two choices stamps: green stamp (the healthy one, for bread, milk, fruits, vegetables), and blue stamp (for soups, sauces, snacks, or food containing

artificial sweeteners). In 2008 Poland introduced the Healthy Choices logo. In 2011 was launched EU Regulation No 1169/2011 on Food Information to Customers (FIC). Us Facts Upfront a private initiative was published in January 2011, launched by Food Marketing Institute (FMI) and Grocery Manufacturers Association (GMA), to display calories, saturated fats, fats, sodium, sugar content, fiber, protein, potassium, vitamin A, vitamin C, vitamin D, calcium, iron, in a voluntary manner, per serving. The date of implementation was 2012. In 2011, Canada FOPL Clear on Calories Initiative was launched by The Canadian Beverage Association. Also, in 2011, in Thailand FOPL for energy, sugar, fat, sodium guidelines daily amount was launched. In the same year, Czech Republic launched the Healthy Choices logo. In 2011 South Korea introduced the traffic light system. In 2012 the EU introduced the FOPNL, which came into force starting on 31 December 2014. In 2012, in Malaysia, voluntary FOPNLs for energy, protein, carbohydrates, and fat were launched by the Malaysian Minister of Health. In the same year, in the Philippines, the initiative of the Philippines Food and Drug Administration under The Ministry of Health, a voluntary declaration for energy and calorie content was launched. In 2013, the keyhole symbol was launched also in Iceland and Lithuania. In 2013, in the UK and Ireland, the traffic light system and the recommended daily intake were launched. In 2014 EU FIC entered into force. In 2014 the health star rating system in New Zealand and Australia was implemented. The health star rating is a rate from ½ to 5 stars, based on energy, saturated fat, sugar, salt, sodium, fiber, and it is voluntary. The Australian Health Star Rating System is a 10 points indicator. In 2015, multiple traffic light systems were launched in Portugal. In 2015, in Croatia, a healthy living guaranteed mark was introduced. In 2016, EU countries started introducing country of origin labeling requirements (for example Italy, Spain, Greece, France, Romania, Portugal). In June 2016, in Chile were introduced front of pack labels that announced when a negative nutrient exceeds the limit set by the Chilean Ministry of Health. In December 2016, as a part of its Healthy Eating Strategy, Canada launched a public consultation on a new compulsory food labeling logo that will warn about "high in sodium, sugars, and saturated fat" contents. Starting in December 2022, new rules will come into place. Will be multilingual FOPNL, calories will be bold and larger, vitamins will be expressed in mg and % in daily intakes, like a footnote, daily value for sugars, list of minerals of health control, such as potassium, calcium, iron, the serving size, the font size of serving size and calories increased and bold line added under the calories information, titles contains and ingredients will be bold, allergens are included in contains, each ingredient begins with a capital letter, all of the sources of sugars are enumerated into brackets, on a neutral background, white. In 2017, six multinational companies developed an Evolved Nutrition Label based on Reference Intake label and adding colors red to green, expressed per serving/portion. This is very interpretative because the manufacturers could reduce the portion to determine a better color. 31 October 2017 French multinational companies use Nutri score, the five-letter system (A, B, C, D, E) with different colors to summarize the nutritional information for different products such as food and drinks. The label information consists of calories, sugar, salt, saturated fatty acid, protein, fiber. In 2017 in Korea a regulation requires manufacturers to inform the customers about the monosaccharides, disaccharides, and nutrients. In March 2017, an EU regulation introduced an easy-to-read FOPNL traffic light system. The Nutri-score was implemented in more than 110 large and small companies in January 2019 from France and was adopted also in Belgium and Spain. Nutri score is based on 15 scientific publications and is introduced in Luxembourg in February 2020. In 2017 Belgian Government voluntarily adopted the Nutri Score label, with implementation starting with 2018. On August 29, 2018, Uruguay was approved Decree 272/2018 referring to FOPNL for those products containing excess amounts of dangerous ingredients (sugar, salt, fats) that is forced starting with February 29,

2020. It also prohibits disclosure of persuasive elements, gifts, contents, games that could attract children and other consumers. In 2018, Nutri Score was introduced in Spain, and in 2019 in Portugal. Brasil, in 2019, adopted the NOVA food classification system, referring to the level of processing and groups foods into four categories, the first group (green color coding, unprocessed or minimally processed), the second group (yellow color coding, processed culinary ingredients), the third group (orange color-coding, processed foods), the fourth group (red color-coding, ultra-processed foods, and drinks). In 2020 Germany adopted Nutri Score. In January 2020, in Mexic, the Government published some amendments to NOM 051 SCFI SSA1-2010, related to FOPL. This affects the use of black octagonal seals and avoids the use of any celebrity, cartoon, or mascot image on products. The rule entered into force in April 2021. Information should be placed from left to right in the upper right corner of the package in the following order: calories, energy, sugars, saturated fats, trans fats sodium, contains caffeine avoid in children, contains sweeteners avoid in children. Repercussions include the increase of costs of package or labels, the end of contracts of image. In January 2020, Italy started using FOPNL, NutriInform Battery, based on the Reference Intakes label, with an added battery symbol, indicating the amounts of nutrients and energy in a serving, as a percentage of the daily intake. It uses portion size. Starting in January 2020, in Israel, the products carry a red label. The products with less than 25 cm² surface are excepted from these regulations. Healthy products have a green label. A consortium of food industries introduced the evolved nutritional label (ENL), that discloses the levels of nutrients per portion. Starting in 2020, the European Commission planned to introduce mandatory FOPNL across the EU. Also in 2020, the Heart Symbol Better Choice logo, in Finland, granted by the Finnish Heart and Diabetes Associations, promotes public health (Table 2).

Table 2. FOPNL

FOPNL Type			FOPNL	Country	Features	Mandatory	Voluntary	Initiative
			Keyhole logo	Sweden			Sweden, Slovenia, Singapore, Finland, Nigeria, Belgium, Poland, Norway, Denmark, Czech Republic, Iceland, Lithuania, Brunei, Malaysia, Mexico, United Arab Emirates, Croatia, Thailand, Brunei, Malaysia, Zambia, Israel	Public
				Denmark				
		Endorsement logo		Lithuania				
			Heart symbol better choice	Croatia	Assessment of nutrients level, both positive and negative			Public

FOPNL Type			FOPNL	Country	Features	Mandatory	Voluntary	Initiative
			Healthy Living	Poland, Czech Republic				Private
			Healthy Choice logo					
Summary indicator schemes			Health Star Rating	Australia, New Zealand				
	Interpretative			France, Belgium, Netherlands, Luxembourg, Germany, Spain				Public
		Graded indicators						
			Nutri-Score					
			Protective Food/ little heart					
						Finland, Ecuador, Chile, Sri Lanka, Peru, Israel, Uruguay	UK,	Public
							South Korea	
	Interpretative	Color-coded	Traffic light system	UK	Use meaningful colors, symbols, or words to assess the nutrient levels of products			
	Interpretative	Color-coded	Other traffic light system	Spain, Portugal				Private
		Non-colour-coded	Stop-sign warnings	Chile				
			Reference intakes label	Europe				Private
Nutrient specific systems					Use numerical information to quantify nutrients as a percentage of recommended daily intake without making the assessment			
	Non-Interpretative	Numerical						
			NutrInform Battery	Italy			European Union, Philippines, Malaysia	Public
						Thailand, Mexico		

FOPNL Type			FOPNL	Country	Features	Mandatory	Voluntary	Initiative
			Energy icon	Malaysia				
					Information related to separate nutrients that exceed a standard level			
			Chilean warning label					
	Textual	Warning label		Chile				

Source: adapted from Manual to develop and implement front-of-pack nutrition labeling: guidance for countries on the selection and testing of evidence-informed front-of-pack nutrition labeling systems in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2020. License: CC BY-NC-SA 3.0 IGO. <https://apps.who.int/iris/bitstream/handle/10665/336988/WHO-EURO-2020-1569-41320-56234-eng.pdf?sequence=1&isAllowed=y>.

Front-of-pack nutrition labelling, a social responsibility issue

According to physicians, eating healthy reduces the risk of cancer, avoids high blood pressure, avoids the risk of heart disease, type 2 diabetes, stroke, helps lower cholesterol levels, stop gaining weight, and reduces the risk of coronary heart disease.

Fat and sugar (more than 22.5 g of total sugars per 100 g) contribute to energy intake, weight gain, obesity, risk of heart disease, type 2 diabetes, stroke. Saturated fats (more than 5 g per 100 g) can lead to an increase in blood cholesterol. Too much salt (more than 1.5 g per salt per 100 g) raises blood pressure.

There is no convergence in displaying the nutritional information on drinks and foods. Worldwide many different FOPNL systems still have often a voluntary manner of implementation, researchers still try to discover how these FOPNL impact the customers' decisions.

Due to the changes, the EU intends to harmonize FOPNL before December 2022.

The European Commission has a proposal to harmonize the mandatory FOPNL and to make the food systems healthy, fair, environmentally friendly, and sustainable.

According to articles number 30 to 34 of the Regulation Number 1169/2011 The Food Information to Consumers (EU FIC) all prepacked food from the EU market should wear nutrition information, that includes the energy value, the amounts of sugars, salt, protein, saturated fat, carbohydrate, all expressed per 100 ml or 100 mg, presented with the numbers aligned or in a tabular format.

According to article number 35 of the Regulation Number 1169/2011 The Food Information to Consumers (EU FIC), to ensure that consumers are properly informed to make healthy choices they allow additional and redundant information in terms of energy value and amount of nutrients expressed in 200 g, and/or using graphical symbols. The information disclosed should be fair, true, objective, to not create discrimination or limits to the free movement of products and goods.

Since the European Commission considers color-coding the most promising in improving healthy choices, it concludes that till the end of 2022 it should introduce a harmonized mandatory FOPNL. Seven European countries (Italy, Czech Republic, Cyprus, Greece, Hungary, Latvia, and

Romania) agree the labels should provide this information on the individual nutrients contained within a product. There are also some exemptions, such as single ingredients products, traditional ones, and protected origin products. They also agree that it should be considered the daily intake, to not avoid some products that are consumed in a small amount, such as oil. This position is oxymoronic with another scheme, Nutri Score, implemented by France, Spain, Belgium, Germany, Netherlands, and Luxembourg.

Brexit and UK exit from the EU represents an opportunity to introduce mandatory regulation for food labeling.

An EU FOPNL scheme can promote social responsibility and sustainability, and healthy eating. When we choose a product, we are checking the price, if we like the taste, the image or the color of the package, nutritional value, but nothing about environmental impact. The food industry produces global greenhouse gas emissions, so to reduce the environmental impact, many changes are expected. In this regard, the European Commission indicated that they work for a harmonized FOPNL

Conclusion

In the light of the last changes in the FOPNL to harmonize them across the world, the current research realized a comparison between the FOPNL existing worldwide. Most studies from literature on FOPNL are based on experiments regarding the FOPNL impact on purchasing and consumption. The solution to implementing health programs stands within consultation between the Health Ministry, companies, NGOs, and the community to collect information and data, to produce reports to encourage prevention, and to develop programs. The preventive health programs refer to: active living, transport, environmental protection, social engagement, wellness programs, economic policies, taxation policies, access to healthy food, restricting marketing and advertising for unhealthy food on radio, TV, newspaper, review, website, reduce children exposure to unhealthy food, easy to read and interpret food labeling on front-of-pack, encourage sports activities, bariatric surgery, discourage diets, because most diets fail, since each individual is different, consumption of healthy food.

FOPNL has some disadvantages since they also evaluate unhealthy products. The limit in implementing a unique FOPNL is represented by the cultural diversity of the population and the differences in dietary habits. This could also represent a challenge for all stakeholders

At the European level, there are also some exemptions such as traditional specialty guaranteed products, protected geographical indication, and protected designation of origin products. Current global health policy results in a variety of different FOPL systems. Studies reveal, through an online experiment, that Nutriscore could be the FOPNL that could be implemented worldwide (Egnell et al., 2020). There is a debate at the global level for setting additional systems and maybe a global one, that is harmonized. All developments and regulations and World Health Organization recommendations contribute to changes in FOPNL systems. Organizations should develop marketing and social responsibility strategies to keep current with the regulatory system. They should adapt their products to future needs and identify challenges and opportunities in directing customers to choose a healthy diet and to eradicate confusion or temptations.

FOPNL provides plenty of information and the food industry tries to convince people and governments about the fact that there is no unhealthy food, but there are only unhealthy diets, due to personal responsibility, not social responsibility. Governments are unable to fight with the food

industry and to provide real and effective nutritional information in a format easy to understand and to interpret, a homogeneous format, to sustain people to choose healthily. Thus, introducing other measures, rules, regulations, and codes to combat obesity does not look well.

Many FOPL are interpretative, depending on access to fresh food, environmental factors, poverty, limited resources, and family size; one example is NutriGrain, which is 30% sugar but gets 4 stars just because of having high fiber and offsets the negative point for high sugar level. Being calculated by companies is more interpretative because they argue that the products are consumed with other products such as milk, a healthy one. An example is represented by Nestle Milo, a malt and chocolate powder that can be mixed with milk. Even if it is 50% sugar it gets 4,5 stars, just because it is calculated as prepared with 200 ml of milk. The product star is 1,5 unprepared or 2,5 if prepared with creamy milk.

It is not a good indicator for healthy and unprocessed food, there must be a stronger incentive in order not to use it in such ways, there are needed messages such as not necessary part of daily diet.

Under any regulations, food labels should offer information about: name of the product, net quantity, name and address of the manufacturer, packer, distributor, ingredients, that are listed in descending weight order, common allergies or intolerances (cereals containing gluten, nuts (pecans, macadamia nuts, hazelnuts, almonds, Brazil nuts, walnuts, pistachios), peanuts, sesame, lupin, eggs, soybeans, milk, lactose, fish, mustard, sulfites), storage instructions (such as refrigerate after opening, store in a cool and dry place, keep refrigerated), date labels (best before, use by), nutrition information (kilocalories, kilojoules, reference intake, the amount of fat, saturated fat, carbohydrates, proteins, salt, sugar) expressed per portion and 100 g/ 100 ml.

One food labeling solution could be represented by:

- a design that increases the capacity of individuals to adopt informed dietary choices;
- the packaged food should display the nutritional information per 100 g/100 ml and recommended serving;
- in each country should be developed a Food Standard Code.

It is better to avoid terms such as reduced-fat or low-fat because we do not know the percentage of fat which consists of the product. Fat-free means that the product does not contain fat or does not contain more than 0,1% fat. The front and back of pack labeling should be neither difficult to understand nor confusing. Consumers should not have difficulties in understanding and interpreting nutritional information in the context of their diet.

Front of package labeling should be applied also to cafes, bakery, and other quick-service stores, ice-cream and juice bars, drive-through menus, vending machines, and self-service food.

Some proposals and some solutions consist of legislative and regulatory actions such as restricting advertising taxing, changing labeling, mentioned also in the literature (Brownell and Horgen, 2007). Some examples in this regard could be represented by:

Table 1. Some measures and proposals

Proposal and Solutions
decreasing the tax on sugar-free, gluten-free, lactose-free, cholesterol-free, diet, bioproducts
during daytime marketing and advertising on radio and tv should be avoided
free fruits and vegetables for pupils
supermarkets should promote healthy cookery lessons to encourage people to cook at home in a healthy manner
raising the legal age for buying food from supermarkets to 18
avoiding cartoon characters on packs
avoiding eating in public places such as streets

Proposal and Solutions
graphic warnings and messages on food packages
decrease the price of vegetables and fruits
sustainability implementation for manufacturers and suppliers, food transportation
work-life balance, women in the workforce, urbanization, ready-made food made meals very different from what it was some years ago
pricing and fiscal measures
taxation policies have been increasingly implemented in the past few years in several OECD countries (e.g. Belgium, Chile, Finland, France, Hungary, and Mexico) to increase the price of potentially unhealthy products such as foods high in salt, sugar or fat, or sugary drinks
environmental management system technology
changes in portion sizes
investments in technology
reduce the visibility and availability of unhealthy food

Source: Author's own research based on literature review.

Even if some individuals declare that they are immune to food advertising that is not a solution. An argument is represented by the number of money companies invest in food advertising (Scully et al., 2009).

One of the limits in implementing healthy food is represented by a low-profit margin, due to the price of the product. A solution in implementing the FOPNL system, as an item of social responsibility is represented by lifestyle medicine. Different policies improve the health of the people, for the prevention of smoking, chronic disease, obesity. To reduce calories, we need to change eating patterns, the level of physical activity, the nutritional quality of the food, reducing sugar, salt, and fat consumption, and increasing vegetable consumption (Gibson et al., 2012).

The European Commission launched the Farm to Fork strategy, in May 2020, which proposes a harmonized and mandatory FOPNL system with implementation by the end of 2022. All the obstacles should be passed because it is important to improve the health of consumers to reduce the burden of non-communicable diseases. This represents a critical issue nowadays given the high risk of people that have the non-communicable disease, overweight, obesity, or other comorbidities associated with covid 19 infections.

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