



# **Wageningen MSc Thesis**

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Nutri-Score and Necessity in the TBT Agreement

Justine Meyer  
941209566050  
LAW203BM

WAGENINGEN UNIVERSITY

LAW GROUP

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Would an introduction of the Nutri-Score in the European Union be in compliance with Article 2.2 TBT Agreement, especially when focusing on the interplay between different labelling elements and their combined influence on consumer perception?

Justine Meyer

First supervisor: Dr. Lucila de Almeida

Second supervisor: Dr. Betina Piqueras Fiszman

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Wageningen University  
Law Group  
P.O. Box 8130 | 6700 EW Wageningen  
Visiting address: Hollandseweg 1 Wageningen  
The Netherlands  
[www.wageningenur.nl/law](http://www.wageningenur.nl/law)

# Nutri-Score and Necessity in the TBT Agreement

Would an introduction of the Nutri-Score in the European Union be in compliance with Article 2.2 TBT Agreement, especially when focusing on the interplay between different labelling elements and their combined influence on consumer perception?

Justine Meyer \*

## Abstract

The EU plans to introduce a mandatory Front-Of-Pack Nutrition Label in order to facilitate consumers' healthier food choices, with the Nutri-Score emerging as a favourite. From a legal viewpoint the introduction of such a measure must comply with WTO Law. This thesis delves into the question whether the Nutri-Score would pass the Necessity Test stipulated in Art 2.2 TBT Agreement, especially if considered in the broader regulatory environment consisting of other already existing labelling requirements relating to nutrition information.

Following a doctrinal approach, the legal part focuses on scrutinizing WTO Agreements and case law and applies the findings to the measure at hand. The empirical part consists of online questionnaires assessing consumer perception of the Nutri-Score in combination with other labelling elements.

The legal doctrinal analysis finds the Nutri-Score a subject to the TBT Agreement, pursuing a legitimate objective, and capable to contribute to at least some extent to the objective, although real life data are limited. The main trade-restrictiveness results from its status as a trademark.

The questionnaires reveal that participants are not per se substantially influenced by other information and often orient toward the Nutri-Score when evaluating a product's healthiness and nutritional quality, thereby supporting the capability of this instrument to fulfil the objective to some degree. However, especially in the intermediate area, some potential for misinterpretation exists.

Thus, this thesis concludes preliminary that the Nutri-Score is capable to pass the Necessity Test. Nonetheless, the bottlenecks are the trade-restrictiveness resulting from its status as a trademark and the estimation of the contribution to the objective, wherefore more empirical research and a compliance analysis with the TRIPS Agreement are recommended.

**Keywords:** Nutri-Score, TBT Agreement, Necessity Test, Article 2.2 TBT Agreement, Front-of-Pack Nutrition Label

\* Student MSc Food Safety – *Food Law & Regulatory Affairs*  
Contact: justine.meyer@wur.nl

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## List of Abbreviations

AB = Appellate Body

CGP = Code of Good Practice for the Preparation, Adoption and Application of Standards

DSB = Dispute Settlement Body

EC = European Commission (in WTO Disputes EC = European Communities)

EU = European Union

FIR = Food Information Regulation, Regulation (EU) No. 1169/2011

FOPNL = Front-Of-Pack Nutrition Label

FSA-NPS = (British) Food Standard Agency-Nutrition Profiling System

GATT = General Agreement on Tariffs and Trade

GFL = General Food Law, Regulation (EC) No. 178/2002

MEP = Member of the European Parliament

MTL = Multiple Traffic Light Scheme

SPSA = Agreement on the Application of Sanitary and Phytosanitary Measures

TBTA = Agreement on Technical Barriers to Trade

TRIPS = Agreement on Trade-related Aspects of Intellectual Property Rights

WIPO = World Intellectual Property Organization

WTO = World Trade Organization

## List of Abbreviated Dispute Names and Their Citations

<b>Short Title</b>	<b>Full case title and citation</b>
<i>Australia – Tobacco Plain Packaging (Cuba)</i>	Panel Report, <i>Australia – Certain Measures concerning Trademarks, Geographical Indications and other Plain Packaging Requirements applicable to Tobacco Products and Packaging</i> , <a href="#">WT/DS458/R</a> , Add.1 and Suppl.1, adopted 27 August 2018
<i>Australia – Tobacco Plain Packaging (Dominican Republic)</i>	Panel Report, <i>Australia – Certain Measures concerning Trademarks, Geographical Indications and other Plain Packaging Requirements applicable to Tobacco Products and Packaging</i> , <a href="#">WT/DS441/R</a> , Add.1 and Suppl.1, circulated to WTO Members 28 June 2018 [appealed by the Dominican Republic 23 August 2018]
<i>Australia – Tobacco Plain Packaging (Honduras)</i>	Panel Report, <i>Australia – Certain Measures concerning Trademarks, Geographical Indications and other Plain Packaging Requirements applicable to Tobacco Products and Packaging</i> , <a href="#">WT/DS435/R</a> , Add.1 and Suppl.1, circulated to WTO Members 28 June 2018 [appealed by Honduras 19 July 2018]
<i>Australia – Tobacco Plain Packaging (Indonesia)</i>	Panel Report, <i>Australia – Certain Measures concerning Trademarks, Geographical Indications and other Plain Packaging Requirements applicable to Tobacco Products and Packaging</i> , <a href="#">WT/DS467/R</a> , Add.1 and Suppl.1, adopted 27 August 2018
<i>EC – Asbestos</i>	Appellate Body Report, <i>European Communities – Measures Affecting Asbestos and Asbestos-Containing Products</i> , WT/DS135/AB/R, adopted 5 April 2001, DSR 2001:VII, p. 3243
<i>EC - Biotech</i>	Panel Reports, <i>European Communities – Measures Affecting the Approval and Marketing of Biotech Products</i> , WT/DS291/R, Add.1 to Add.9 and Corr.1 / WT/DS292/R, Add.1 to Add.9 and Corr.1 / WT/DS293/R, Add.1 to Add.9 and Corr.1, adopted 21 November 2006, DSR 2006:III, p. 847

<i>EC – Sardines</i>	Appellate Body Report, <i>European Communities – Trade Description of Sardines</i> , WT/DS231/AB/R, adopted 23 October 2002, DSR 2002:VIII, p. 3359
<i>EC – Sardines</i>	Panel Report, <i>European Communities – Trade Description of Sardines</i> , WT/DS231/R and Corr.1, adopted 23 October 2002, as modified by Appellate Body Report WT/DS231/AB/R, DSR 2002:VIII, 3451
<i>EC – Seal Products</i>	Appellate Body Reports, <i>European Communities – Measures Prohibiting the Importation and Marketing of Seal Products</i> , <a href="#">WT/DS400/AB/R</a> / <a href="#">WT/DS401/AB/R</a> , adopted 18 June 2014, DSR 2014:I, p. 7
<i>EC – Seal Products</i>	Panel Reports, <i>European Communities – Measures Prohibiting the Importation and Marketing of Seal Products</i> , WT/DS400/R and Add.1 / WT/DS401/R and Add.1, adopted 18 June 2014, as modified by Appellate Body Reports WT/DS400/AB/R / WT/DS401/AB/R, DSR 2014:II, p. 365
<i>US – Clove Cigarettes</i>	Appellate Body Report, <i>United States – Measures Affecting the Production and Sale of Clove Cigarettes</i> , <a href="#">WT/DS406/AB/R</a> , adopted 24 April 2012, DSR 2012: XI, p. 5751
<i>US – Clove Cigarettes</i>	Panel Report, <i>United States – Measures Affecting the Production and Sale of Clove Cigarettes</i> , <a href="#">WT/DS406/R</a> , adopted 24 April 2012, as modified by Appellate Body Report WT/DS406/AB/R, DSR 2012: XI, p. 5865
<i>US – COOL</i>	Appellate Body Reports, <i>United States – Certain Country of Origin Labelling (COOL) Requirements</i> , <a href="#">WT/DS384/AB/R</a> / <a href="#">WT/DS386/AB/R</a> , adopted 23 July 2012, DSR 2012:V, p. 2449
<i>US – COOL</i>	Panel Reports, <i>United States – Certain Country of Origin Labelling (COOL) Requirements</i> , <a href="#">WT/DS384/R</a> / <a href="#">WT/DS386/R</a> , adopted 23 July 2012, as modified by Appellate Body Reports



<i>US – COOL (Article 21.5 – Canada and Mexico)</i>	Appellate Body Reports, <i>United States – Certain Country of Origin Labelling (COOL) Requirements – Recourse to Article 21.5 of the DSU by Canada and Mexico</i> , <a href="#">WT/DS384/AB/RW</a> / <a href="#">WT/DS386/AB/RW</a> , adopted 29 May 2015
<i>US – COOL (Article 21.5 – Canada and Mexico)</i>	Panel Reports, <i>United States – Certain Country of Origin Labelling (COOL) Requirements – Recourse to Article 21.5 of the DSU by Canada and Mexico</i> , WT/DS384/RW and Add.1 / WT/DS386/RW and Add.1, adopted 29 May 2015, as modified by Appellate Body Reports WT/DS384/AB/RW / WT/DS386/AB/RW
<i>US – Tuna II (Mexico)</i>	Appellate Body Report, <i>United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products</i> , <a href="#">WT/DS381/AB/R</a> , adopted 13 June 2012, DSR 2012:IV, p. 1837
<i>US – Tuna II (Mexico)</i>	Panel Report, <i>United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products</i> , <a href="#">WT/DS381/R</a> , adopted 13 June 2012, as modified by Appellate Body Report WT/DS381/AB/R, DSR 2012:IV, p. 2013

# 1. Introduction

To begin with, the first chapter states the problem, describes the research aim and question and delivers information about the methodology applied in this thesis.

## 1.1 Background

Overweight and obesity are considered major public health problems in the European Union and their prevalence continues to rise. While in 2010 already 56.7% of all adult European citizens were considered overweight <sup>1</sup> and 20.5% obese <sup>2</sup>, these numbers rose to 59.4% of the population being classified as overweight <sup>3</sup> and 22.9% as obese in 2016 <sup>4</sup>. An excessive amount of weight is considered a relevant risk factor for the development of non-communicable diseases like strokes, diabetes type II, heart failure and cancer <sup>5</sup>. Aside from the detrimental impact on the quality of life on an individual level and the shortening of life expectancies, overweight, obesity and associated chronic diseases account for significant amounts of the public health budget. A study of OECD-countries found these nations spending on average 8.4% of their total health expenses on treating high body mass index and related conditions <sup>6</sup>. The European Commission acknowledged the scope of the problem and developed in 2007 a *White Paper on a Strategy for Europe on Nutrition, Overweight and Obesity related health issues*, where it pledges to take action on this matter <sup>7</sup>. Since unhealthy and too energy-dense diets, in connection with physical inactivity, are considered a main contributor to weight gain <sup>8</sup>, a part of this strategy relates to consumer information and highlights

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<sup>1</sup> World Health Organization, 'Age-Standardized Prevalence of Overweight' (*European Health Information Gateway*) <[https://gateway.euro.who.int/en/indicators/hfa\\_627-3020-age-standardized-prevalence-of-overweight-defined-as-bmi-25-kgm2-in-people-aged-18-years-and-over-who-estimates/visualizations/#id=27329](https://gateway.euro.who.int/en/indicators/hfa_627-3020-age-standardized-prevalence-of-overweight-defined-as-bmi-25-kgm2-in-people-aged-18-years-and-over-who-estimates/visualizations/#id=27329)> accessed 10 December 2020.

<sup>2</sup> World Health Organization, 'Age-Standardized Prevalence of Obesity' (*European Health Information Gateway*) <[https://gateway.euro.who.int/en/indicators/hfa\\_630-3023-age-standardized-prevalence-of-obesity-defined-as-bmi-30-kgm2-in-people-aged-18-years-and-over-who-estimates/visualizations/#id=27332](https://gateway.euro.who.int/en/indicators/hfa_630-3023-age-standardized-prevalence-of-obesity-defined-as-bmi-30-kgm2-in-people-aged-18-years-and-over-who-estimates/visualizations/#id=27332)> accessed 10 December 2020.

<sup>3</sup> World Health Organization, 'Age-Standardized Prevalence of Overweight' (n 1).

<sup>4</sup> World Health Organization, 'Age-Standardized Prevalence of Obesity' (n 2).

<sup>5</sup> World Health Organization, 'Noncommunicable Diseases' (*The Global Health Observer*) <<https://www.who.int/data/gho/data/themes/noncommunicable-diseases>> accessed 10 December 2020.

<sup>6</sup> OECD, 'The Heavy Burden of Obesity: The Economics of Prevention' (OECD Publishing 2019) OECD Health Policy Studies 17 <<https://ec.europa.eu/chafea/health/newsroom/news/09012020/documents/67450d67-en.pdf>> accessed 10 December 2020.

<sup>7</sup> European Commission, 'White Paper on a Strategy for Europe on Nutrition, Overweight and Obesity Related Health Issues' (2007) COM(2007) 279 final <[https://ec.europa.eu/health/archive/ph\\_determinants/life\\_style/nutrition/documents/nutrition\\_wp\\_en.pdf](https://ec.europa.eu/health/archive/ph_determinants/life_style/nutrition/documents/nutrition_wp_en.pdf)> .

<sup>8</sup> World Health Organization, 'Unhealthy Diets & Physical Inactivity' <[https://www.who.int/nmh/publications/fact\\_sheet\\_diet\\_en.pdf](https://www.who.int/nmh/publications/fact_sheet_diet_en.pdf)> accessed 22 January 2021.

the importance of nutrition labelling as a way to enable consumers to make conscious and healthy decisions for their purchasing and consumption behaviour of food and beverages <sup>9</sup>.

Therefore and in addition to an already existing regulation covering Nutrition and Health Claims (Regulation No. 1924/2006), the European Commission introduced the Food Information Regulation No. 1169/2011 and thereby made it mandatory for food operators to label the amount of energy (in kilocalories and kilojoule), fat, saturated fatty acids, carbohydrates, sugars, protein and salt their products contain on the packages.

Notwithstanding these attempts to improve the dietary quality of the population by increasing the amount of nutrition information, there is no valid evidence yet that these measures have had the desired effect <sup>10</sup>. That raises the question whether these approaches are sufficient and effective enough. Studies suggest that graphical and interpretive Front-of-Pack Nutrition labels (hereinafter FOPNL) might be more consumer-friendly and efficient than the currently prevailing numerical and prescriptive Back-of-Pack versions <sup>11 12 13</sup>.

The EC has recognized the drawbacks of current practice and the further need for more comprehensible nutrition labelling and has announced plans to introduce an uniform and mandatory FOPNL in the fourth quarter of 2022, within the course of the new Farm to Fork Strategy <sup>14</sup>.

In recent years, many different versions of FOPNL have been developed in the EU, e.g. Reference Intakes labels or the NutriInform Battery, which indicate the amount of nutrients in a product related to the reference daily intake, positive endorsement logos like the Keyhole or Health logos, colour-coded 'traffic light' labels, which evaluate and interpret these amounts by allocating colours to

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<sup>9</sup> European Commission, 'White Paper on a Strategy for Europe on Nutrition, Overweight and Obesity Related Health Issues' (n 7) 5.

<sup>10</sup> Michele Cecchini, 'Heavy Burden of Obesity: The Economics of Prevention A Quick Guide for Policy Makers' 4 <<https://www.oecd.org/health/health-systems/Heavy-burden-of-obesity-Policy-Brief-2019.pdf>> accessed 31 January 2021.

<sup>11</sup> Sarah Campos, Juliana Doxey, and David Hammond, 'Nutrition Labels on Pre-Packaged Foods: A Systematic Review' 14 Public Health Nutr 1496, 1502.

<sup>12</sup> M. Cecchini and L. Warin, 'Impact of Food Labelling Systems on Food Choices and Eating Behaviours: A Systematic Review and Meta-Analysis of Randomized Studies' (2016) 17 Obes Rev. 201, 208.

<sup>13</sup> Klaus Grunert and Josephine Wills, 'A Review of European Research on Consumer Response to Nutrition Information on Food Labels' (2007) 15 J Public Health 385, 395.

<sup>14</sup> European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System' (2020) COM(2020) 381 final 13 <[https://eur-lex.europa.eu/resource.html?uri=cellar:ea0f9f73-9ab2-11ea-9d2d-01aa75ed71a1.0001.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:ea0f9f73-9ab2-11ea-9d2d-01aa75ed71a1.0001.02/DOC_1&format=PDF)> accessed 9 December 2020.

them, and logos that take the interpretive approach even further and grade the food, like the Nutri-Score<sup>15</sup>.

Albeit there are many possible FOPNL options available and supported by different Member States, the Nutri-Score as a grading tool has emerged as the favourite of many stakeholders and citizens<sup>16 17</sup> and can already be used voluntarily in several EU countries<sup>18</sup>.

Since the EU is a member of the World Trade Organisation<sup>19</sup> newly introduced policies have to be in compliance with these international trade obligations. Even though WTO Agreements do not have direct effect in the EU jurisdiction and cannot automatically preclude or overrule EU law<sup>20 21</sup>, compliance is strongly advised, otherwise WTO Members could raise concerns in the committees<sup>22</sup> or even sue the EU in front of the WTO Dispute Settlement System. The litigation history shows that food related policies often occupy the Panel and Appellate Body and in recent years labelling disputes have become more and more prominent<sup>23</sup>. The consequences of a lost case are amendments to or withdrawal of a measure, otherwise trading partners are allowed to impose trade restrictions<sup>24</sup>. Other FOPNL variants, most famously the Multiple Traffic Light schemes, have already

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<sup>15</sup> European Commission, 'Report from the Commission to the European Parliament and the Council Regarding the Use of Additional Forms of Expression and Presentation of the Nutrition Declaration' (European Commission 2020) COM(2020) 207 final 7 <[https://ec.europa.eu/food/sites/food/files/safety/docs/labelling-nutrition\\_fop-report-2020-207\\_en.pdf](https://ec.europa.eu/food/sites/food/files/safety/docs/labelling-nutrition_fop-report-2020-207_en.pdf)> accessed 9 December 2020.

<sup>16</sup> BEUC et al., 'Joint Letter to the European Commission Re: Mandatory Nutri-Score' (27 April 2020) <[https://www.beuc.eu/publications/beuc-x-2020-029\\_joint\\_letter\\_to\\_the\\_european\\_commission\\_re\\_mandatory\\_nutri-score.pdf](https://www.beuc.eu/publications/beuc-x-2020-029_joint_letter_to_the_european_commission_re_mandatory_nutri-score.pdf)>.

<sup>17</sup> Cédric Musso, 'PRO-NUTRISCORE - Europäische Bürgerinitiative' (*openPetition*) <<https://www.openpetition.eu/petition/online/pro-nutriscore-22>> accessed 9 December 2020.

<sup>18</sup> European Commission, 'Report from the Commission to the European Parliament and the Council Regarding the Use of Additional Forms of Expression and Presentation of the Nutrition Declaration' (n 15).

<sup>19</sup> World Trade Organization, 'WTO | European Union - Member Information' <[https://www.wto.org/english/thewto\\_e/countries\\_e/european\\_communities\\_e.htm](https://www.wto.org/english/thewto_e/countries_e/european_communities_e.htm)> accessed 18 January 2021.

<sup>20</sup> Mitsuo Matsushita and others, '2 WTO Law and Domestic Law', *The World Trade Organization: Law, Practice, and Policy*, vol 3 (Oxford University Press 2015) 36.

<sup>21</sup> *Portuguese Republic v Council of the European Union* [1999] European Court of Justice C-149/96 at para. 47.

<sup>22</sup> Anne Marie Thow and others, 'Nutrition Labelling Is a Trade Policy Issue: Lessons from an Analysis of Specific Trade Concerns at the World Trade Organization' (2018) 33 *Health Promot Int* 561, 565.

<sup>23</sup> Marco Bronckers and Ravi Soopramanien, 'The Impact of WTO Law on European Food Regulation' (2008) 3 *Eur. Food Feed. Law Rev.* 361, 371.

<sup>24</sup> *ibid* 374.

drawn a lot of attention regarding their legal compliance with WTO law <sup>25</sup>. The Nutri-Score likely has to be defended against similar accusations, since already within the EU some critics exist <sup>26 27</sup>.

Therefore, a rigid examination of WTO conformity is more than a formality but a necessary prerequisite prior introduction.

## 1.2 Aim and Research Question

The assessment of compliance with WTO requirements is a crucial part for all WTO Members before introducing a measure. As far as known, up to now no such evaluation has been conducted for the Nutri-Score, even though its prospective introduction is likely. Thus, this thesis aims at making a first contribution to this.

The focal point is the Necessity Test stipulated in Art. 2.2 TBT Agreement (hereinafter TBTA), since a complete compliance analysis would be too extensive for this paper. Moreover, the legal assessment considers the regulatory environment the Nutri-Score would be embedded in and whether already existing nutrition-related labelling requirements, such as Ingredient Lists and Nutrition Tables, or possibilities, such as Health and Nutrition Claims, can undermine the efficiency of the Nutri-Score. Thus, the main focus during the assessment of the contribution to fulfilment takes place from a behavioural point of view. This thesis does not discuss whether the underlying dietary index is appropriate from a nutritional viewpoint, nor are (national) dietary guidelines critically examined. Rather, it shall be analysed whether FOPNL in general and the Nutri-Score in particular are capable to steer consumer behaviour regarding food choices in healthier directions, taken as given that they base on scientifically reliable distinctions.

With these attempts and constraints in mind, the research question is formulated as follows:

***Would an introduction of the Nutri-Score in the European Union be in compliance with Article 2.2 TBT Agreement, especially when focusing on the interplay between different labelling elements and their combined influence on consumer perception?***

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<sup>25</sup> Martin Holle, Enrico Togni, and Arianna Vettorel, 'The Compatibility of National Interpretative Nutrition Labelling Schemes with European and International Law' (2014) 9 Eur. Food Feed. Law Rev. 148, 157.

<sup>26</sup> Zosia Wanat and Giorgio Leali, 'Italy Collects Allies in Food Label Fight' (*POLITICO*, 14 August 2020) <<https://www.politico.eu/article/italy-collects-allies-in-food-label-fight/>> accessed 10 December 2020.

<sup>27</sup> European Parliament, 'Nutriscore System: Risks for Italian-Made Products' (*Parliamentary questions*) <[https://www.europarl.europa.eu/doceo/document/P-9-2019-004228\\_EN.html](https://www.europarl.europa.eu/doceo/document/P-9-2019-004228_EN.html)> accessed 10 December 2020.

In order to answer this, these subquestions are addressed during the thesis:

1. How is the Nutri-Score defined, calculated and currently applied?
2. What are the plans of the European Legislator regarding a prospective introduction?
3. Why is WTO law applicable in general and which Agreements are particularly relevant?
4. Would the measure constitute a technical regulation or standard and what are the thereof resulting legal implications for European Union as a WTO Member?
5. *Necessity Test*: Does the Nutri-Score pursue a legitimate objective and is it more trade-restrictive than necessary to fulfil this goal, considering the risks and gravity non-fulfilment would create?
6. *Empirical part in form of online questionnaires*: How do consumers react to the Nutri-Score in combination with other nutrition-related labelling elements like Nutrition Tables, Nutrition Claims or Ingredient Lists? Do they still use the Nutri-Score as the decisive piece of information to evaluate healthiness and related aspects of food products?
7. How do these results influence the compliance analysis with Art. 2.2 TBTA?

### 1.3 Method

The main part of the thesis is conducted as doctrinal research, which

*“aims to systematise, rectify and clarify the law on any particular topic by a distinctive mode of analysis of authoritative texts that consist of primary and secondary sources.”* <sup>28</sup>

Applicable law in this context are the primary legislative pieces of the WTO, in form of the different Agreements (GATT, TBTA, SPSA, TRIPS). Even though there is no doctrine of precedence established in the WTO Dispute Settlement System <sup>29</sup>, case law and decisions by the Panels and Appellate Bodies are considered relevant, as they indicate imaginable interpretation possibilities and guidelines.

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<sup>28</sup> Mike McConville and Wing Hong Chui, ‘Introduction and Overview’, *Research Methods for Law*, vol 2 (Edinburgh Press 2017) 4.

<sup>29</sup> World Trade Organization, ‘WTO | Disputes - Dispute Settlement CBT - Legal Effect of Panel and Appellate Body Reports and DSB Recommendations and Rulings’ (*Trade Topics*, 2004) <[https://www.wto.org/english/tratop\\_e/dispu\\_e/disp\\_settlement\\_cbt\\_e/c7s2p1\\_e.htm](https://www.wto.org/english/tratop_e/dispu_e/disp_settlement_cbt_e/c7s2p1_e.htm)> accessed 10 December 2020.

The law is interpreted, as usually done in the WTO jurisprudence, case-specific<sup>30</sup> and based on the rules for treaty interpretation laid down in the Vienna Convention on the Law of Treaties<sup>31 32 33</sup>. In order to facilitate understanding of legal provisions, argumentations and contexts of legal pieces, articles and comments by scholars are consulted as well.

The doctrinal approach is considered adequate, as it constitutes ‘research *in* law’, compared to other methods that ‘research *about* law’<sup>34</sup> and is therefore suitable to assess compliance of a measure with legal obligations and constraints imposed by International Trade Law. Moreover, such an analysis facilitates the understanding of law and might unveil fields of inconsistencies and uncertainties within the law<sup>35</sup>, which this paper tries to analyse.

However, the doctrinal approach is limited, as it disregards important aspects beside the mere legal arguments<sup>36</sup>. For instance, despite the WTO Agreements confirm Member States' right to protect human health as an exemption, provided certain conditions, such as necessity, are met, the Necessity Test requires some scientific evidence<sup>37</sup>, which is collected in fields outside the legal research. Therefore, the mere textual interpretation of the WTO provisions and former decisions of the DSB/AB are not sufficient to adjudicate a legal dispute in regards to the Nutri-Score.

Especially for the relational and comparative analyses within the Necessity Test an interdisciplinary and non-doctrinal approach is required to understand consumer behaviour and reactions to FOPNL and possible alternatives. Broad reviews and meta-analyses are used to summarise existing data comprehensibly. However, when going in depth into the research conducted for the Nutri-Score in particular, a more detailed approach is required. Thus, in this case a literature review is done.

This review is conducted according to the following criteria: The main source is the database Scopus. The search criteria are: “Nutri-Score Food Choice”, “Nutri-Score Understanding”, “Nutri-Score Effectiveness” and “Nutri-Score Real Life”. These terms are chosen because they relate to the efficiency of the Nutri-Score as a tool to improve dietary choices. The kind of literature included are

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<sup>30</sup> Isabelle van Damme, *Treaty Interpretation by the WTO Appellate Body* (Oxford University Press 2009) 23.

<sup>31</sup> Michael Lennard, ‘Navigating by the Stars: Interpreting the WTO Agreements’ (2002) 5 J. Int. Econ. Law 17, 17.

<sup>32</sup> A Qureshi, *Interpreting WTO Agreements* (Cambridge University Press 2015) 4.

<sup>33</sup> Vienna Convention on the Law of Treaties (1155 UNTS 331, 8 ILM 679 (1969), 63 AJIL 875 (1969)).

<sup>34</sup> Amrit Kharel, ‘Doctrinal Legal Research’ 4 <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3130525](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3130525)>.

<sup>35</sup> Khushal Vibhute and Filipos Ayanalem, ‘Legal Research Material’ 81 <<https://chilot.files.wordpress.com/2011/06/legal-research-methods.pdf>>.

<sup>36</sup> *ibid* 83.

<sup>37</sup> Chris Downes, ‘Worth Shopping Around? Defending Regulatory Autonomy under the SPS and TBT Agreements’ (2015) 14 World Trade Rev. 553, 18.

articles and reviews published in English, describing experiments conducted in at least one European country (incl. Switzerland) and answering research questions somehow related to the topic at hand. In order to avoid missing literature not available in Scopus, the same research is conducted in PubMed. However, all results displayed there were already included in the Scopus outcomes, as can be seen in Table 1:

Table 1: Literature Research Outcome

		<b>Scopus</b>	<b>PubMed</b>
Search outcome	Nutri-Score Food Choice	24	26
	Nutri-Score Understanding	11	13
	Nutri-Score Effectiveness	11	21
	Nutri-Score Efficiency	0	8
	Nutri-Score Real Life	2	1
Eligible studies	Nutri-Score Food Choice	13	0
	Nutri-Score Understanding	1	0
	Nutri-Score Effectiveness	1	0
	Nutri-Score Efficiency	0	0
	Nutri-Score Real Life	1	0

Due to the gaps in the empirical research and the emphasis of this thesis on the efficiency of the Nutri-Score in conjunction with other nutrition-related labelling particulars, the conduct of an empirical study is deemed necessary. More details about the methodology applied and the precise execution of the study can be found in Chapter 4.2.1.2.

## 2. The Nutri-Score

Subsequently, the Nutri-Score as a variant of FOPNL is introduced, as well as its current application and why it could be a favourite during the discussion about the prospective plans to introduce a mandatory FOPNL in the EU.

### 2.1 Definition and Calculation

The Nutri-Score constitutes a FOPNL and uses letters and colours to grade the nutritional quality of a particular food product<sup>38 39</sup>. It was developed by France within its *National Nutrition and Health*

<sup>38</sup> The Nutri-Score can be and is also applied to beverages. To enhance legibility, only food products are mentioned in the following text.

<sup>39</sup> European Commission, 'Report from the Commission to the European Parliament and the Council Regarding the Use of Additional Forms of Expression and Presentation of the Nutrition Declaration' (n 15) 8.



*Programme*<sup>40</sup>, a plan aiming at improving the health status of the population by altering its dietary habits<sup>41</sup> and is based on the UK's Food Standards Agency nutrient profiling system (FSA-NPS)<sup>42</sup>.

The core principle of the FSA-NPS and therefore subsequently of the Nutri-Score is to weigh nutritionally favourable ingredients a food product contains against the unfavourable ones<sup>43</sup>. It always refers to 100 g or ml of a product rather than a predetermined portion size<sup>44</sup>.

Considered as positive characteristics are the following elements: fruits, vegetables, pulses, nuts and rapeseed, walnut and olive oils (%), fibres (g/100g) and proteins (g/100g). They are given points from 0 (low amount) to 5 (high amount).

Points from 0 (low amount) to 10 (high amount) are allocated to the adversely viewed nutriment energy (kJ/100g), sugars (g/100g), saturated fatty acids (g/100g) and sodium (g/100g).

Finally, the points for the positive elements are subtracted from the ones for the disadvantageous nutriment to receive an ultimate score on a discrete continuous scale from -15 (very healthy) to +40 (least healthy)<sup>45</sup>. Figure 1 summarizes the calculation:

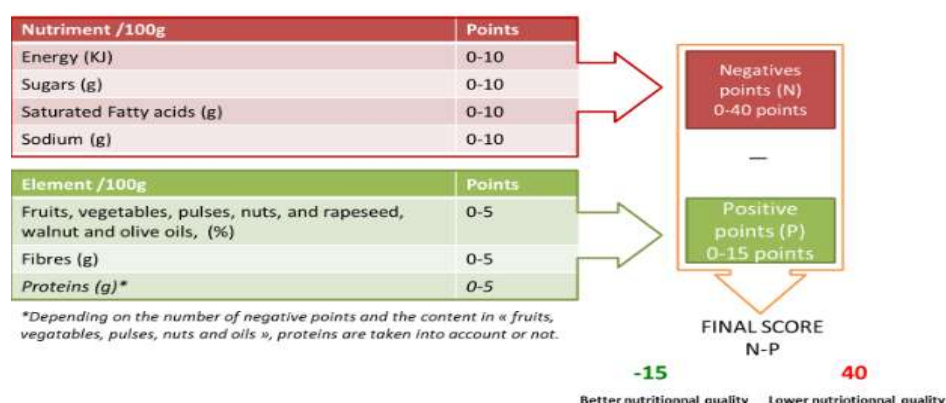


Figure 1: general calculation of the Nutri-Score<sup>46</sup>. In order to acknowledge the special nutritional characteristics resulting from the nature of some common food products, different calculations are applied to cheese, mono products made of oil, butter or fat and beverages<sup>47</sup>

<sup>40</sup> Julia Chantal and Serge Hercberg, 'Development of a New Front-of-Pack Nutrition Label in France: The Five-Colour Nutri-Score' (2017) 3 Public Health Panor 712, 713.

<sup>41</sup> Serge Hercberg, Stéphanie Chat-Yung, and Michel Chaillac, 'The French National Nutrition and Health Program: 2001 - 2006 - 2010' (2008) 53 Int J Public Health 68, 68.

<sup>42</sup> Chantal and Hercberg (n 40) 713.

<sup>43</sup> Eurofins, 'The Nutri-Score - All Important Facts about the Current Status - Eurofins Scientific' (*Food Testing News*, 3 December 2020) <<https://www.eurofins.de/food-analysis/food-news/food-testing-news/nutri-score/>> accessed 9 December 2020.

<sup>44</sup> Chantal and Hercberg (n 40).

<sup>45</sup> *ibid.*

<sup>46</sup> Santé Publique France, 'Nutri-Score Frequently Asked Questions' 25.

<sup>47</sup> Eurofins (n 43).

Based on this outcome the product is categorised into one of five classes, which are distinguishable by different colours and letters, aiming at improving comprehensibility and readability for the consumer <sup>48</sup>. The Letter A on a dark green background indicates a high quantity of favourable elements in the food item, while E on a red background is allocated to products containing a substantial amount of nutriment considered as unhealthy. The Letters B to D and their respectively different coloured backgrounds symbolise distinctive gradations between these two extremes.

Table 2: Nutri-Score Grouping <sup>49</sup>

Points		Logo
Solid foods	Beverages	
Min to -1	Waters	
0 - 2	Min - 1	
3 - 10	2 - 5	
11 - 18	6 - 9	
19 - max	10 - max	

As described above, the Nutri-Score only takes some characteristics of a food product into account. The presence and quantity of, for instance, additives or other synthetic ingredients is not included in this assessment <sup>50</sup>.

## 2.2 Current Application

Normally, food labelling in general and therefore also nutrition labelling is a competency of the EU rather than the individual Member States. The main regulatory pieces in this regard are the Food Information Regulation (EU) No. 1169/2011 and Nutrition and Health Claim Regulation (EC) No. 1924/2006. Since these legal pieces constitute regulations, they are applicable in the Union without further transitioning by Member States <sup>51</sup>. Even though both texts do not refer to the Nutri-Score in

<sup>48</sup> Chantal and Hercberg (n 40) 720.

<sup>49</sup> Santé Publique France (n 46) 29.

<sup>50</sup> Vincent Delhomme, 'Improving Food Choices Through Nutrition Labelling: Towards a Common "Nutri-Score" Scheme Across the EU' (2020) 20 CEPOB, 4.

<sup>51</sup> European Union, 'Regulations, Directives and Other Acts' (*European Union*, 16 June 2016) <[https://europa.eu/european-union/law/legal-acts\\_en](https://europa.eu/european-union/law/legal-acts_en)> accessed 31 January 2021.

particular as a possible labelling option, some European countries used the regulatory freedom offered in Art. 35 FIR to allow its voluntary application in their countries. Nowadays, products in France, Spain, Belgium, Germany and the Netherlands can display the Nutri-Score <sup>52</sup>.

The Nutri-Score constitutes a trademark and is protected under Intellectual Property Rights in the European Union and is also registered with the World Intellectual Property Organization (WIPO) in several countries <sup>53</sup>. Thus, any usage of the label must be registered and approved by the proprietor Santé Publique France <sup>54</sup>. Currently, the use of the Nutri-Score outside the European Union is not permitted <sup>55</sup>.

## 2.3 Plans to introduce it in the European Union

The European Commission has recognized the shortcomings of current nutrition labelling requirements in achieving healthier consumption patterns and thereby decreasing the prevalence of overweight and associated diseases. In order to combat those problems, it announced within the new Farm to Fork Strategy to introduce a harmonised mandatory FOPNL, aiming at empowering and enabling consumers to make informed and health conscious food choices <sup>56 57</sup>.

The publication of the Inception Impact Assessment ARES(2020)7905364 reveals four possibilities the EC is currently considering:





Nutrient-specific labels - examples		Summary labels - examples	
Numerical (Option 1)	Colour-coded (Option 2)	Endorsement logos (Option 3)	Graded indicators (Option 4)
			

Figure 2: Possible FOPNL variants currently discussed as mandatory options <sup>58</sup>

<sup>52</sup> European Commission, 'Report from the Commission to the European Parliament and the Council Regarding the Use of Additional Forms of Expression and Presentation of the Nutrition Declaration' (n 15) 7.

<sup>53</sup> Santé Publique France (n 46) 13.

<sup>54</sup> *ibid* 11.

<sup>55</sup> *ibid* 13–14.

<sup>56</sup> European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System' (n 14) 13.

<sup>57</sup> European Commission, 'Annex to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Council of the Regions - A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System' (2020) COM(2020) 381 final Annex 3.

<sup>58</sup> European Commission, 'Inception Impact Assessment - Proposal for a Revision of Regulation (EU) No 1169/2011 on the Provision of Food Information to Consumers -' (2020) Ares(2020)7905364 3.

Many stakeholders, inter alia, consumer associations, academics and public health organisations favour the Nutri-Score as a variety of Option 4/Graded indicators and issued a joint letter to the responsible Commissioner in order to show their support for this scheme. This letter was even signed by some MEPs and big food companies like Nestle and retailers, e.g. REWE Group and Lidl Stiftung & Co. KG.<sup>59 60</sup> Additionally, a citizen petition was launched to indicate public grassroots support for this measure<sup>61</sup>. Also the Parliament has been occupied with a discussion about the Nutri-Score<sup>62</sup>.

Moreover, a study exploring possible nutrition labelling options, requested by the European Parliament and conducted by renowned scholars, recommends an introduction of the Nutri-Score rather than a color-coded traffic light system for instance<sup>63</sup>.

Considering all evidence currently available, the chances for the Nutri-Score to prevail against other proposed options and becoming the variant of choice for the new mandatory FOPNL are high.

### 3. Applicability of WTO Laws

In the coming section the applicability of WTO laws in general is discussed. A closer look will be taken at the TBTA and the therein contained distinction between technical regulations and standards. Moreover, it is examined which of those the Nutri-Score would probably constitute and thereof resulting consequences for the EU as a WTO Member State.

In our globalised world food products are not only produced, traded and consumed domestically within states anymore, but more often than not subject to complex supply chains and international trade. Thus, not only the food items themselves but also their packaging and the attached labels cross borders regularly. Since labelling requirements might differ from country to country, these divergent obligations might create obstacles to trade because food producers and importers have to ensure the compliance in every state they want to market the product, which requires resources. Therefore, labelling requirements can constitute barriers to trade and fall under the jurisdiction of

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<sup>59</sup> BEUC et al. (n 16).

<sup>60</sup> foodnavigator.com, 'Nestlé and Danone Back Bid to Enforce Nutri-Score across Europe' (*foodnavigator.com*) <<https://www.foodnavigator.com/Article/2020/04/28/Nestle-and-Danone-back-bid-to-enforce-Nutri-Score-across-Europe>> accessed 9 December 2020.

<sup>61</sup> Cédric Musso (n 17).

<sup>62</sup> European Parliament, 'Introduction across the EU of the Nutri-Score Nutrition Label' (*Parliamentary questions*) <[https://www.europarl.europa.eu/doceo/document/E-9-2019-002795\\_EN.html](https://www.europarl.europa.eu/doceo/document/E-9-2019-002795_EN.html)> accessed 9 December 2020.

<sup>63</sup> Kai Purnhagen and Hanna Schebesta, 'Food Labelling for Consumers - EU Law, Regulation and Policy Options' (European Union 2019) 54 <[https://solidarites-sante.gouv.fr/IMG/pdf/food\\_labelling\\_for\\_consumer\\_eu.pdf](https://solidarites-sante.gouv.fr/IMG/pdf/food_labelling_for_consumer_eu.pdf)>.

the World Trade Organization <sup>64</sup>. Since the requirements for different measures under different Agreements vary, the question which Agreement within the WTO jurisdiction applies to the Nutri-Score is crucial in order to determine its compliance with international trade obligations.

### 3.1 Applicability of GATT

The General Agreement on Tariffs and Trade (GATT) lays down requirements applicable to all international trade in goods <sup>65</sup>. Together with the General Agreement on Trade in Services (GATS) and Trade-Related Aspects of Intellectual Property Rights (TRIPS) it determines the basic principles of the WTO jurisdiction <sup>66</sup>. The GATT aims at reducing tariffs and other barriers to trade and seeks to eliminate discriminatory treatment <sup>67</sup>.

Although the introduction of a new labelling particular in the EU would theoretically fall within its scope, the obligations laid down in the GATT are not considered in this paper, as explained in section 3.2.1.

### 3.2 Applicability of TBTA

The Agreement on Technical Barriers to Trade (TBTA) covers non-tariff barriers as defined in Annex 1 of the Agreement. The application of the TBTA is a threshold issue and hinges on whether or not a measure falls within one of the categories and constitutes either a 'technical regulation', a 'standard' or a 'conformity assessment procedure' <sup>68</sup>.

Since there are no information available yet about the specific implementation of the Nutri-Score, the 'conformity assessment procedure' cannot be taken into account in this paper.

Nonetheless, the question remains whether an introduction of a new labelling particular in the EU would qualify as either a technical regulation or a standard and thus render the TBTA applicable.

Both concepts are subject to a similar, but in pivotal details different regulatory framework <sup>69</sup>.

Therefore, the characterisation of a measure is an important preliminary step before the correct obligations of the TBTA can be applied <sup>70</sup>.

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<sup>64</sup> Anne Marie Thow and others (n 22) 562.

<sup>65</sup> World Trade Organization, 'WTO | GATT and the Goods Council - Gateway' (*Trade Topics*) <[https://www.wto.org/english/tratop\\_e/gatt\\_e/gatt\\_e.htm](https://www.wto.org/english/tratop_e/gatt_e/gatt_e.htm)> accessed 10 December 2020.

<sup>66</sup> World Trade Organization, 'WTO | Understanding the WTO - Overview: A Navigational Guide' (*About WTO*) <[https://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/agrm1\\_e.htm](https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm1_e.htm)> accessed 10 December 2020.

<sup>67</sup> 'General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 187, 33 I.L.M. 1153 (1994)' Preamble.

<sup>68</sup> *Appellate Body Report EC - Asbestos* [2001] Appellate Body WT/DS135/AB/R at para. 59.

<sup>69</sup> Minjung Kim, 'The "Standard" in the GATT/WTO TBT Agreements: Origin, Evolution and Application' (2018) 52 J. World Trade L. 765, 768.

<sup>70</sup> *ibid* 769.

### 3.2.1 Standard or Technical Regulation

The subsequent paragraphs explore the legal and practical differences between standards and technical regulations under the TBTA and how the Nutri-Score would probably be classified. Moreover, thereof resulting implications for the EU are shortly discussed.

#### *A) Legal definition and implications for WTO Member States*

At a first glance the definitions of technical regulation and standard laid down in Annex 1 of the TBTA seem interchangeable. Both deal with product characteristics and both definitions expressly state labelling requirements as within their scope of application. Hence and like the AB in US-Tuna II observed, the subject matter of a measure does not determine whether it constitutes a technical regulation or standard <sup>71</sup>.

The striking difference between them is their (non-)binding nature. While compliance is mandatory for technical regulations, standards can be used on a voluntary basis.

Even though both conceptions are subject to the same principles of non-discrimination, prohibition of unnecessary obstacles to trade and harmonization toward international standards, the detailed formulation of these goals differs <sup>72</sup>. While technical regulations are governed by Article 2 and 3, standards are regulated in Article 4 and Annex 3, with the latter laying down the Code of Good Practice for the Preparation, Adoption and Application of Standards (CGP).

Seemingly, the CGP appears to be non-enforceable soft law <sup>73</sup>. However, read in conjunction with Art. 4.1 TBTA it becomes clear WTO Members are obliged to ensure that their central government standardizing bodies accept and comply with the CGP, which renders the obligations laid down in Annex 3 enforceable after all <sup>74</sup>. Anyhow, this only applies to standards introduced by states. The TBTA as a legislative piece of international law concerns primarily governmental actions and has limited influence on the conduct of private actors and non-governmental standards imposed by companies and corporations <sup>75</sup>. Those are only governed by soft law requirements under the TBTA

<sup>76</sup>.

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<sup>71</sup> *Appellate Body Report US - Tuna (II) Mexico* [2012] Appellate Body WT/DS381/AB/R, at para. 187.

<sup>72</sup> Minjung Kim (n 69) 768.

<sup>73</sup> Arwel Davies, 'Technical Regulations and Standards under the WTO Agreement on Technical Barriers to Trade' (2014) 41 *Leg. Issues Econ. Integration*. 37, 6.

<sup>74</sup> *ibid.*

<sup>75</sup> Yi Shin Tang and Bruno Youssef Yunen Alves de Lima, 'Private Standards in the WTO: A Multiple Streams Analysis of Resisting Forces in Multilateral Trade Negotiations' (2019) 41 *Contexto Internacional* 501, 504.

<sup>76</sup> Arwel Davies (n 73) 6.

Based on the literal reading of the TBTA and the requirements and obligations involved for a WTO Member State to introduce either technical regulation or a standard by a central governmental body, the approach seems to be undifferentiated <sup>77</sup>. When it comes to labelling requirements, the choice of the measure should hinge on the importance of the information conveyed and the presumed industry compliance rather than on alleged legal advantages in the WTO <sup>78</sup>. If the information is considered of significant value for the consumer and the industry adoption is assumed to be low, a mandatory technical regulation should be the measure of choice and vice versa <sup>79</sup>. The review conducted by WTO tribunals should focus on possible illegitimate considerations and disguised protectionism for both technical regulations and standards and assess the conformity of the measure with the same level of scrutiny regardless its classification <sup>80</sup>.

Additionally relevant are the distinct notification procedures for technical regulations and governmental standards. While standards only have to be apprised to the ISO/IEC Information centre <sup>81</sup>, technical regulations have to be notified to the WTO Secretary <sup>82</sup>.

Another decisive feature is the lack of equivalence recognition for standards <sup>83 84</sup> and that they are, unlike technical regulations, not subject to a peer-review system <sup>85</sup>.

So, taken theoretical and practical similarities and differences of standards and regulations into account, it seems the classification of a measure as a standard decreases the level of scrutiny a Member State has to expect from others, even though the primary legal obligations are comparable. The following chapter tries to answer the question whether the Nutri-Score would constitute a standard of regulation and thereof resulting, which exact TBTA Articles are applicable.

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<sup>77</sup> *ibid* 7.

<sup>78</sup> *ibid* 8.

<sup>79</sup> *ibid*.

<sup>80</sup> *ibid* 9.

<sup>81</sup> 'Agreement on Technical Barriers to Trade, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 120 (Hereinafter TBTA)' Annex 3.J + K.

<sup>82</sup> *ibid* Art. 2.9.2 + 15.

<sup>83</sup> Minjung Kim (n 69) 768–769.

<sup>84</sup> TBTA Annex 3.H, Art. 2.7.

<sup>85</sup> Minjung Kim (n 69) 769.

### *B) Case law and practical application to Nutri-Score*

A landmark case regarding the interpretation of the term technical regulation is EC-Asbestos. During this dispute the Appellate Body (AB) developed a three-tier test to determine whether or not a measure constitutes a technical regulation. This test has been reiterated in various other cases, e.g. EC-Sardines, EC-Seal Products and US-Tuna II <sup>86 87 88</sup>.

According to the findings in EC-Asbestos, a technical regulation must fulfil three criteria <sup>89</sup>:

- 1. Must lay down product characteristics*
- 2. Must be applicable to an identifiable product/ group of products*
- 3. Compliance must be mandatory*

The term product characteristic was interpreted by the AB in this case according to its ordinary meaning, which led to the conclusion that it means objectively definable features, qualities or attributes <sup>90</sup>. Furthermore, product characteristics might relate, inter alia, to intrinsic factors like product composition, size or viscosity, but also include means of identification, presentation and appearance, as the explicit statement of labelling requirements in the TBTA already indicates. The wording in the last sentence includes the phrases ‘exclusively’ and ‘or’, thus the AB assumed it suffices for a technical regulation to lay down one product characteristic <sup>91</sup>. Following, it was determined that the formulation of a product characteristic can be either in a positive or negative form, so that a product must or must not contain a certain feature <sup>92</sup>.

The Nutri-Score constitutes an additional labelling particular, introduced to enhance consumer information about the healthiness of the product in question. Since labels are a mean of presentation and are literally stated as an example for ‘product characteristic’ in Annex 1.1, the Nutri-Score can be considered as fulfilling the first criterion <sup>93</sup>.

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<sup>86</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 183.

<sup>87</sup> *Appellate Body Report EC - Sardines* [2002] Appellate Body WT/DS231/AB/R at para. 176.

<sup>88</sup> *Appellate Body Report EC - Seal Products* [2014] Appellate Body WT/DS400/AB/R at para. 5.1.

<sup>89</sup> *Appellate Body Report EC - Asbestos* (n 68) at paras. 66-70.

<sup>90</sup> *ibid* at para. 67.

<sup>91</sup> *ibid*.

<sup>92</sup> *ibid* at para. 69.

<sup>93</sup> *Panel Report US - Tuna (II) Mexico* [2012] Panel WT/DS381/R at para. 7.73.



The second requirement was introduced because if it is unclear to which products the measure applies, compliance and enforcement become impossible. Therefore, a technical regulation must be applicable to an identifiable product or group of products. However, the AB also concluded that the regulation must not actually name, identify or specify all products it applies to <sup>94</sup>. The need for compliance might solely result from a product characteristic of the good if this is subject to the regulation. This interpretation was reiterated in the EC-Sardines case, where the AB emphasized again that identifiable does not equal expressly identified within the regulation <sup>95</sup>.

Even though there are no details about the implementation of the Nutri-Score yet, one can assume that this new requirement might be integrated in the labelling framework regulation Food Information Regulation No. 1169/2011 (FIR) or at least refers to this as a basis. The FIR in general applies to all food products as laid down in Art. 1 No. 3 FIR, which are intended for the final consumers and includes caterers. Food is defined in accordance with Art. 2 General Food Law (GFL). The FIR determines the basic obligations of stakeholders in regard to food labelling and dictates which particulars are mandatory for which group of products. Moreover, it stipulates that the food business operator, who puts the food on the market, is responsible for correct labelling <sup>96</sup>.

For the sake of the argument, it is assumed that the Nutri-Score would be implemented and applied to the same products like the already mandatory Nutrition Table required in Art. 9 No. 1 I) FIR and further elaborated in Art. 29 to 35 FIR. Regarding the nutrition declaration there are some additional exemptions, e.g. food supplements and water <sup>97</sup>, as well as special categories of products listed in Annex V FIR. However, products to which the regulation applies are identifiable, even if they are not expressly named in the regulation. The products have to fulfil the characteristics of food <sup>98</sup>, have to be destined to the final consumer/ caterer <sup>99</sup> and are not covered by the exemptions laid down in Annex V and Art. 29. If these requirements are fulfilled, the product can be considered as within the

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<sup>94</sup> *Appellate Body Report EC - Asbestos* (n 68) at para. 70.

<sup>95</sup> *Appellate Body Report EC - Sardines* (n 87) at para. 180.

<sup>96</sup> Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 Text with EEA relevance 2011 (OJ L 304) 18, Art. 8 No. 1.

<sup>97</sup> *ibid* Art. 29.

<sup>98</sup> Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety 2002 (OJ L 31) 1, Art. 2.

<sup>99</sup> Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 Text with EEA relevance Art. 1 No. 3.

scope of the FIR and therefore requires mandatory nutrition labelling and, in future maybe, the display of the Nutri-Score. Up to now, it is not known that the identification of a product as within the scope of application of the FIR has ever been problematic. Thus, the second criterion for a technical regulation is met as well.

Lastly, the AB interpreted the term mandatory and stated that characteristics of a product must be regulated in a *“binding or compulsory fashion by prescribing or imposing one or more characteristics”*<sup>100</sup>. Although this requirement seems to be straightforward in theory, the practical application and interpretation in the DSB is more complicated and nuanced, since the isolated fact that there is no necessity to use a label to put a product legally on the market, does not render the measure automatically voluntary<sup>101</sup>. A milestone case regarding this question is US-Tuna II. Here, the AB made clear both regulations and standards can contain compulsory, binding or enforceable characteristics. The AB therefore decided that additional features and circumstances have to be considered as well<sup>102</sup>. These may involve the questions *“whether the measure is enacted by a WTO Member States, whether it allows or prohibits particular acts, whether it allows for other means of addressing the matter and the nature of the matter addressed by the measure “*<sup>103</sup>. In the US-Tuna II case the AB found the measure indeed enacted by the USA as a WTO Member State, since the US Congress passed the mean and included in the United States Code of Federal Regulations. Therefore, the AB considered the measure and subsequent implementing regulations legislative or respectively regulatory acts of the US federal authorities<sup>104</sup>.

The requirements for the label prohibited any references to dolphins, porpoises or marine mammals on the label in the case the product was not eligible for this specific dolphin-safe label. Other labelling schemes that might convey same or similar information to the consumer must not be used by virtue<sup>105</sup>. Thus, the AB concluded that the dolphin-safe label constitutes a single and legally mandated set of requirements for making any statement regarding the ‘dolphin-safety’ of tuna products in the United States.

Another important aspect to consider at this point is the question whether surveillance and enforcement mechanisms are applied. Although all labelling requirements can be enforced, since this characteristic is enacted in the mere definition of requirement, the nature and extent of this

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<sup>100</sup> *Appellate Body Report EC - Asbestos* (n 68) at para. 69.

<sup>101</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 196.

<sup>102</sup> *ibid* at para. 199.

<sup>103</sup> *ibid* at para. 188.

<sup>104</sup> *ibid* at para. 191.

<sup>105</sup> *ibid* at para. 193.

enforcement has to be scrutinized <sup>106</sup>. In general it can be said that voluntary standards are enforceable via general laws against deceptive practices, whereas mandatory regulations are subject to more elaborated and sophisticated enforcement mechanism that go beyond prevention of deception and includes “*active surveillance mechanisms that guarantee compliance with its norms and imposes sanctions in case of wrongful labelling.*” <sup>107 108</sup>.

In the case of US-Tuna II the AB noted that specific enforcement mechanisms were in place, e.g. surveillance mechanisms and sanctions in case of non-compliance <sup>109</sup>. Following a comment of the US, the AB highlighted the fact that the enforcement of the US measure was not attached to any deceptive practice but to the monitoring of compliance with labelling requirements itself <sup>110</sup>.

The US and a dissident in the panel argued a label would only be mandatory if there is a requirement to use the label in order to place the product on the market <sup>111 112</sup>. The AB opposed this view. It concluded Annex 1.1 TBTA does not refer to market or territory whatsoever. Moreover, it does not stipulate that the label must be a prerequisite for putting the product on the market in the first place <sup>113</sup>. There is the option to not use the label, but if a producer wants to make a statement about the dolphin-safety of its product, they are obliged to use the dolphin-safe label and are not allowed to apply another schemes <sup>114</sup>.

In its conclusion on whether the US-Tuna II Label is mandatory in the sense of Annex 1.1 TBTA, the AB summarised that the US-measure is composed of legislative and regulatory acts of the US federal authorities. And the measure lays down single and legally binding definitions and requirements for the concept of ‘dolphin-safety’. Producers are not allowed to make statements outside the scope of the label regarding this matter. The measure is considered to cover the entire field of dolphin safety. Thus, the AB concluded this measure constitutes a technical regulation within the meaning of Annex 1.1 of the TBTA and is indeed mandatory <sup>115</sup>.

To determine whether the Nutri-Score would be considered compulsory as established in the case described above, the same criteria are applied.

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<sup>106</sup> *ibid* at para. 195.

<sup>107</sup> Arwel Davies (n 73) 20.

<sup>108</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 194.

<sup>109</sup> *ibid*.

<sup>110</sup> *ibid* at para. 195.

<sup>111</sup> *ibid* at para. 181.

<sup>112</sup> *Panel Report US - Tuna (II) Mexico* (n 93) at paras. 7.146-7.158.

<sup>113</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 196.

<sup>114</sup> *ibid*.

<sup>115</sup> *ibid* at para. 199.

First of all, it has to be checked whether the measure is enacted by a WTO Member State. Even though there are currently not enough information available to answer this question exhaustively, one can make some assumptions about the possible way the Nutri-Score could be implemented. Up to now, it is part of a strategy paper of the EC, which is, inter alia, a legislative body in the EU. Moreover, it is also likely to assume that the possibility of the application of the Nutri-Score would be laid down either directly in the FIR, which already governs other nutrition labelling elements or as a directive, supplementary implementing regulation or delegated regulation. Either or, each way would constitute a legislative or regulatory act and involves official authorities of the EU. The Nutri-Score would probably be subject to the same surveillance and enforcement mechanisms like other nutrition labelling elements, be it the mandatory particulars like the Nutrition Table or voluntary ones like Nutrition and Health Claims. These are subject to official controls executed by competent authorities in the respective EU Member States <sup>116</sup>. They are responsible to enforce, monitor and verify food law, including surveillance and other activities. Additionally, they have the competence to decide on penalties applicable to violations of the law <sup>117</sup> <sup>118</sup>. Therefore, the enforcement goes beyond the laws against general deceptive practices. All in all, and if not implemented in a complete different manner, the scheme would probably constitute a measure enacted by a WTO Member State.

Secondly, the new FOPNL would allow the display of an interpretative nutritional logo in addition to already existing nutrition labelling elements. Therefore, the measure would definitely allow a particular act. Whether it would also prohibit the display of other FOPNL, like e.g. the Nutri-Battery is not clear yet. However, to facilitate the consumer understanding of the new information <sup>119</sup> and to avoid barriers to intra-European trade and thereof resulting internal market disturbances, as required in Art. 26 TFEU, it is reasonable to assume that, even if not compulsory, either the newly prescribed FOPNL can be displayed or none at all. Otherwise, confusion for the consumers and

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<sup>116</sup> European Commission, 'Official Controls and Enforcement' (*Food Safety*, 17 October 2016) <[https://ec.europa.eu/food/safety/official\\_controls\\_en](https://ec.europa.eu/food/safety/official_controls_en)> accessed 10 December 2020.

<sup>117</sup> Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety Art. 17(2).

<sup>118</sup> Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 Text with EEA relevance Art. 35 (3).

<sup>119</sup> Rodrigo Feteira-Santos and others, 'Effectiveness of Interpretive Front-of-Pack Nutritional Labelling Schemes on the Promotion of Healthier Food Choices: A Systematic Review' (2020) 2020 Int J Evid Based Healthc 24, 35.

additional compliance costs for business might arise. Thereof resulting and if implemented in this way, the Nutri-Score would constitute, similar to the US dolphin-safe tuna label and comparable to the Organic Label in the EU, a single and legally mandated mean that does regulate a specific field of labelling, in this case Front-Of-Pack Nutrition Labels.

Finally, the nature of the matter the measure addresses has to be taken into account as well. In this particular case, it would be labelling requirements aiming at consumer information regarding nutritional quality of a food product. Admittedly, this terminology cannot be used as a distinctive feature to distinguish standard and regulation in this case, since it is part of both definitions. However, the same was true in the US-Tuna II case <sup>120</sup>.

Nevertheless, based on the analysis above there are enough similarities identifiable between the label scrutinized in the US-Tuna II dispute and the Nutri-Score. In conclusion, even in the case a product does not have to bear this label in order to be legally put on the market, the probability that only this governmental enacted label can be used in case the producer wants to provide further information about the nutritional content of the product in form of a FOPNL is high. Therefore, the label can be considered *de facto* mandatory in the WTO jurisdiction, even if the EC decides to water down its plans and steps back from a *de jure* mandatory introduction.

### *C) Consequences for further analysis*

This examination shows that a FOPNL such as the Nutri-Score can be considered, if implemented in the assumed way regardless its *de jure* obligatory or voluntary nature, a technical regulation and is therefore covered by the TBTA.

This Agreement constitutes a *lex specialis* to the more general GATT Agreement <sup>121</sup>. Unlike in other realms of law, the application of a *lex specialis* provision does not forbid the parallel application of *lex generalis* requirements in the WTO jurisdiction <sup>122</sup>. It is nowhere mentioned in the primary texts that TBTA and GATT are mutually exclusive and a concurrent application by the Panel and AB is common <sup>123 124</sup>.

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<sup>120</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 187.

<sup>121</sup> Henry Hailong Jia, 'Entangled Relationship between Article 2.1 of the TBT Agreement and Certain Other WTO Provisions' (2013) 12 *Chin. J. Int. Law* 723, 746.

<sup>122</sup> *ibid.*

<sup>123</sup> Fay Valinaki, 'Repairing the Defects of Article 2.1 of the WTO Technical Barriers to Trade Agreement: An Amendment Proposal' (2016) 43 *Leg. Issues Econ. Integration*. 65, 65.

<sup>124</sup> *Appellate Body Report US - Clove Cigarettes* [2012] Appellate Body WT/DS406/AB/R, at para. 100.

However, it is also common that specific provisions, like the TBTA, are examined before the GATT, even though both are applicable <sup>125</sup>. Also, in the rare case of a conflict between obligations the TBTA would overrule the GATT <sup>126</sup>. For these reasons, this paper follows the usual approach as established in the cases US-TUNA II and US-COOL <sup>127</sup> and conducts a compliance analysis of the Nutri-Score with the TBTA first. Due to the scope of this thesis, the GATT obligations cannot be considered in this paper and their compliance assessment is subject to further research.

### 3.3 Applicability of SPSA

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPSA) applies to these respective measures if they affect international trade <sup>128</sup> and defines them in Annex A of the Agreement.

Annex 1a), 1c) and 1d) deal with the mitigation of risks for plants, animals and humans stemming from the entry, establishment or spread of pests, diseases and disease-carrying or -causing organisms, as well as the prevention and limitation of other damages that might result from pests. Evidently, these definitions cannot be applied to the Nutri-Score, because this label does not display information about any of the above stated risks.

More informative on the contrary is Annex 1b). In this paragraph, the SPSA refers to the protection of *“human and animal life and health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs.”* Moreover, the subsequent paragraph states that *“sanitary and phytosanitary measures include all relevant laws, decrees, regulations, requirements and procedures including, inter alia, (...) labelling requirements directly related to food safety.”*

Therefore, the theoretical possibility that the Nutri-Score constitutes a measure covered by the SPSA exists. The decisive points are whether this label relates directly to food safety and informs about risks arising from additives, contaminants, toxins or disease-causing organisms.

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<sup>125</sup> Joel Trachtman and Gabrielle Marceau, ‘A Map of the World Trade Organization Law of Domestic Regulation of Goods: The Technical Barriers to Trade Agreement, the Sanitary and Phytosanitary Measures Agreement, and the General Agreement on Tariffs and Trade’ (2014) 48 J. World Trade L. 351, 429.

<sup>126</sup> World Trade Organization, ‘WTO | Legal Texts - Marrakesh Agreement’ (*Uruguay Round Agreement*) <[https://www.wto.org/english/docs\\_e/legal\\_e/05-anx1a\\_e.htm](https://www.wto.org/english/docs_e/legal_e/05-anx1a_e.htm)> accessed 10 December 2020.

<sup>127</sup> Joel Trachtman and Gabrielle Marceau (n 125) 430.

<sup>128</sup> ‘Agreement on the Application of Sanitary and Phytosanitary Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 493. (Hereinafter SPSA)’ Art. 1.1.

In order to answer the first question it is important to consider the rationale for the implementation. Based on the information available in the Farm to Fork Strategy-Paper, the new mandatory FOPNL is mentioned under the headline “2.4 promoting sustainable food consumption and facilitating the shift to healthy, sustainable diets” and shall “empower consumers to make informed, healthy and sustainable food choices.”<sup>129</sup>. A relationship to Food Safety is nowhere mentioned. This also makes sense, if considering that it is prohibited in the EU to put unsafe food on the market in the first place<sup>130</sup>. Thus, all foods available to the final consumer in the EU can be deemed safe. Even though the Nutri-Score delivers information about the nutritional properties and thereof resulting the presumed degree of healthiness of a product and can mark specific product as unhealthy, this cannot be set equal to unsafe. Food products that are unsafe are inherently unhealthy because in the common meaning unsafe describes the ability or likelihood to cause harm, damage and loss<sup>131</sup>, however, the vice versa assumption is not true. Unhealthy food might not be “conducive to health”<sup>132</sup>, but it does not necessarily need actively to cause harm.

Therefore, the aim of the Nutri-Score is not to provide information about Food Safety but about the nutritional content and quality of safe food products.

The other important exercise at this point is to assess whether the Nutri-Score refers to additives, contaminants, toxins or disease-causing organism as stated in Annex 1b) SPSA. As outlined in Chapter 2, the Nutri-Score constitutes a label that provides information in the broader sense about the level and amount of nutriment (energy, sugars, saturated fatty acids, sodium) and other elements (fruits, vegetables, pulses, nuts, different kinds of plant oils, fibres, proteins) of a food product, interprets them and allocates a score to the product, to determine its contribution to a healthy diet.

A milestone case in the interpretation of these terms is EC-Biotech.

Here, the Panel began with scrutinizing the meaning of the appellation ‘additive’ and took the ordinary meaning as well as the definition according to the Codex Alimentarius into account. As per the New Shorter Oxford English Dictionary, additives are substances “*added to another so as to give*

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<sup>129</sup> European Commission, ‘Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System’ (n 14) 13.

<sup>130</sup> Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety Art. 14.

<sup>131</sup> ‘Definition of UNSAFE’ <<https://www.merriam-webster.com/dictionary/unsafe>> accessed 13 January 2021.

<sup>132</sup> ‘Definition of UNHEALTHY’ <<https://www.merriam-webster.com/dictionary/unhealthy>> accessed 13 January 2021.

*it specific qualities*”, whereas the Codex definition entails more details and adds that additives are used for technological purposes during the manufacturing process and are not normally consumed as foods or used as typical food ingredients <sup>133</sup>. However, later in the dispute the Panel limited the applicability of the Codex Definition <sup>134</sup>, since the Annex A1) does not refer to relevant standards. The Panel did so mainly because it did not agree that an additive has to be “*added at a particular stage prior to the consumption of the food in question*” <sup>135</sup>. The preceding sentence in the Codex definition that an additive is not normally consumed as a food or used as an ingredient was not questioned.

During the discussion the Panel also interpreted substance as a real physical matter <sup>136</sup> and highlighted the importance of the intentional addition as a prerequisite for a material to be considered an additive <sup>137</sup>.

The Nutri-Score takes seven elements of a food product into account: energy, sugars, saturated fatty acids, sodium, fibres, proteins and plant-based ingredients such as fruits, vegetables, pulses, nuts and healthy oils (rapeseed, walnut, olive).

The question whether one of these features constitutes an additive depends on the underlying definition. The easiest aspect is energy, which does not comply with the common definition used by the Panel, since it does not constitute a real physical matter.

The other factors are more complex in their evaluation, if solely the dictionary definition is taken into account. Either sugars, saturated fatty acids, sodium, plant components and oils, fibres or proteins can be added to a product to achieve specific qualities. Yet, this definition would render every ingredient used in food manufacturing an additive. Even though the Panel in EC-Biotech did not per se believe that the “*drafters of the SPSA intended for terms like ‘additives’ to have the meaning given them by definition contained in relevant international standards*” <sup>138</sup>, the isolated application of only the common meaning would expand the field of additives to an unfeasible extent. In the case of EC-Biotech, where the major question regarding additives was whether they have to be added at an particular stage of production or processing, this limitation made sense. However, it seems odd that the drafters of the TBTA mentioned the applicability of definitions laid down by international standard setting organizations as relevant for the TBTA, whereas the SPSA,

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<sup>133</sup> *Panel Report EC - Biotech* [2006] Panel WT/DS291/R-WT/DS293/R at para. 7.297.

<sup>134</sup> *ibid* at para. 7.300.

<sup>135</sup> *ibid*.

<sup>136</sup> *ibid* at para. 7.298.

<sup>137</sup> *ibid* at para. 7.299.

<sup>138</sup> *ibid* at para. 7.300.



according to the Panel, shall not be allowed to rely on these meanings<sup>139</sup>. Unfortunately, this case did not reach the appeal stage, therefore no further comment by another WTO body is available regarding this interpretation.

Since the use of standards and, as it can be inferred, also definitions established by the Codex Alimentarius Commission is generally encouraged in the WTO jurisdiction<sup>140 141</sup> and the use of these standards has been upheld in case law under the TBTA<sup>142</sup>, the Codex Definition is concurrently applied to the common understanding in the subsequent analysis.

If done so, fruits, vegetables, pulses, nuts, plant oils, sugar and sodium do not constitute food additives, since they are normally consumed as food themselves or commonly used as typical ingredients.

The categorization of saturated fatty acids, fibres and proteins on the other hand is more disputable. These elements can be added for technological purposes during the manufacturing processes. Saturated Fatty Acids and some kind of fibres, such as pectin, are even classified as additives (E 570 and E 440) within the European Additive Regulation No. 1333/2008<sup>143</sup>. According to European legislation, proteins do not constitute additives<sup>144</sup> but if only the Codex definition is considered, they could be attributed as ones as well.

So, the obvious conclusion would be that the Nutri-Score does inform about additives, which can indeed not be completely rejected. However, as stated by the AB in EC-Asbestos, the measure at issue always has to be reviewed in its entirety<sup>145</sup>.

Thus, aim and capability of the measure have to be taken into account as well. As outlined above, the stated goal of the Nutri-Score is not to inform the consumer about food safety risks arising from additives but to inform about the quantity of specific nutrients in the products. That additives happen to influence the calculation because they might consist of nutrients that are considered does not relate to the goal but to the inherent design of the labelling scheme. The Nutri-Score is not capable to provide specific information about additives, since it mixes the amounts of nutrients present originating from additives with the amount of nutrients present due to common food

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<sup>139</sup> *ibid* at para 7.300, Footnote 449.

<sup>140</sup> Richard J. Dawson, 'The Role of the Codex Alimentarius Commission in Setting Food Standards and the SPS Agreement Implementation' (1995) 6 Food Control 261, 265.

<sup>141</sup> Don Buckingham, 'The Labeling Of GM Foods –The Link Between Codex And The WTO' (2000) 3 AgBioForum 209, 3.

<sup>142</sup> *Appellate Body Report EC - Sardines* (n 87) 227.

<sup>143</sup> Regulation (EC) No 1333/2008 of the European Parliament and of the Council of 16 December 2008 on food additives (Text with EEA relevance) 2018 (OJ L 354) 16, Annex II Part B Table 3.

<sup>144</sup> *ibid* Art. 3 Nr. 2 a) viii.

<sup>145</sup> *Appellate Body Report EC - Asbestos* (n 68) at para. 64.

ingredients and therefore does not inform at the first glance about the presence, quantity or nature of additives. Another point to consider here is that additives are normally used in small quantities, compared to regular ingredients. The objective of the Nutri-Score, however, is to indicate the presence of comparable large amounts of specific nutrients and elements.

Therefore, the correct deduction is that the Nutri-Score does take the presence of specific additives into account, when they consist of nutrients that are part of the calculation, but it does nevertheless not constitute an effective tool to inform the consumer about additives and additionally does not aim to do so.

Also the term contaminant was reviewed and interpreted by the Panel in EC-Biotech. Again, the common meaning and the Codex definition were consulted. The main difference to the concept of additives is the non-intentional presence of a contaminant in a food item <sup>146</sup>. Examples for contaminants stated in the SPSA include pesticides, veterinary drug residues and extraneous matter <sup>147</sup> and their presence might result from production, further handling or environmental factors <sup>148</sup>. As per dictionary definition, a contaminant “*pollutes, corrupts or infects*” a product <sup>149</sup>.

All aspects that are taken into account during the calculation of the Nutri-Score are either intentionally added (e.g. fruits and oils as ingredients) or inherent to food products (e.g. protein, saturated fatty acids and sugars) and do seldomly result from production, handling or environmental factors. Moreover, they are commonly accepted and partly even desired food constituents and do not pollute, corrupt or infect a product. Also the examples given in the SPSA for contaminants cannot logically be applied *ejusdem generis* to the factors the Nutri-Score considers. Therefore, one can conclude that the Nutri-Score does not provide information about contaminants.

Another risk for Food Safety listed in SPSA Annex 1A are toxins, which were defined by the Panel in the same dispute according to the common understanding as “*a poison produced by a micro-organism or other organism and acting as an antigen in the body*” <sup>150</sup>. A further factor the Panel took into account was the low concentration, at which a toxin can cause harm <sup>151</sup>. The Codex definition was mentioned as well, whereupon two types of toxins exists: mycotoxins and microbial toxins. Moreover, the Panel stated that there is usually an effort made to avoid toxins in food products <sup>152</sup>.

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<sup>146</sup> Panel Report EC - Biotech (n 133) at para. 7.312.

<sup>147</sup> SPSA Annex A No. 3b Footnote 4.

<sup>148</sup> Panel Report EC - Biotech (n 133) at para. 7.305.

<sup>149</sup> *ibid* at para. 7.312.

<sup>150</sup> *ibid* at para. 7.321.

<sup>151</sup> *ibid*.

<sup>152</sup> *ibid*.

Even though some features of a food product the Nutri-Score uses in its calculation, might harm the body in the long term and in large amounts (e.g. sugars and saturated fatty acids), they normally do not do so if consumed in reasonable quantities and especially not in low concentrations.

The definition of antigen is important to scrutinize in this context as well: In the common meaning, an antigen constitutes a substance that evokes an immune response<sup>153</sup>. Energy, sugars, saturated fatty acids, sodium, plant components and oils and fibres do not normally cause such a reaction and can therefore not be considered a toxin according to the ordinary meaning.

However, one might argue that proteins can trigger such reactions if a person suffers from an allergy to this particular type of protein. Notwithstanding this fact, the Nutri-Score does not expressly refer to these potentially allergenic proteins but only uses the overall amount of protein in a food product and does not distinguish nor informs whether these could cause allergic reactions. Moreover, the declaration of allergens in the EU is not included in the nutrition information, but potential allergenic components have to be mentioned and highlighted in the Ingredient List<sup>154</sup>. Thus, although the Nutri-Score includes proteins that might act as an antigen in the body, it does not provide special information about it and therefore is not capable of diminishing this risk.

The definition of disease-causing organism was not addressed for Annex A1b in the EC-Biotech case, only for Annex A1A. However, there is no reason to believe that the core definitions laid down for the first part of the Annex change dramatically for the following parts. Therefore, the Panel's interpretation for Annex A1A can also be applied to characterise disease-causing organism in the meaning of Annex A1B.

According to the Panel, the WHO defines disease as a pathological conditions accompanied by ,inter alia, clinical symptoms<sup>155</sup>. An organism is specified as a vector<sup>156</sup>. A further definition was not given in this dispute but according to common meaning, an organism constitutes a living structure, e.g. plant, virus, animal<sup>157</sup>.

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<sup>153</sup> 'Definition of ANTIGEN' <<https://www.merriam-webster.com/dictionary/antigen>> accessed 13 January 2021.

<sup>154</sup> Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 Text with EEA relevance Art. 9 No. 1c) and Art. 21 No. 1a).

<sup>155</sup> *Panel Report EC - Biotech* (n 133) at para. 7.277.

<sup>156</sup> *ibid.*

<sup>157</sup> 'Definition of ORGANISM' <<https://www.merriam-webster.com/dictionary/organism>> accessed 13 January 2021.

Undeniable, nutriments considered in the Nutri-Score such as energy, sugars, saturated fatty acids and sodium can increase the risk for some diseases and might therefore, depending on the scientific consensus about the level of contribution of an oversupply of a particular nutrient to an illness, be indeed considered as disease-causing. Nevertheless, the above stated definition used by the Panel cannot be applied to the nutriments, since they are no living structures and therefore do not constitute organisms.

Another line of argumentation to consider at this point is the mutual exclusivity of TBTA and SPSA <sup>158</sup>. <sup>159</sup> Based on the discussion in the chapter before, there is valid reason to assume that the measure is already within the scope of the TBTA and therefore cannot be covered by the SPSA as well.

All in all, even if an unhealthy diet poses indisputably a risk to human health, factors like an unbalanced nutrition and over- or under-supply of nutrients and energy and thereof resulting detrimental impacts on the well-being of humans are not considered in this SPSA. Therefore, even though the Nutri-Score aims at facilitating healthy choices and thereby relates to public health, the SPSA is not applicable in this case.

### 3.4 Applicability of TRIPS

Also Intellectual Property Rights are subject to a WTO Agreement, the Agreement on Trade-Related Aspects of Intellectual Property Rights (hereinafter TRIPS). It covers copyright, trademarks, geographical indications and other forms of intellectual property <sup>160</sup>. Similar to the aims of the GATT and other Agreements, it seeks to strike a balance between necessary protection of intellectual property rights and the reduction of trade distortions and impediments <sup>161</sup>. Likewise, it entails comparable provisions, such as the National Treatment and Most-Favoured-Nation Treatment clauses <sup>162</sup>, and some variations of a weighing and balancing test <sup>163</sup>.

As explained, the Nutri-Score is registered as a trademark with the EUIPO and the WIPO, thereby rendering the provisions stipulated in this Agreement applicable. However, resulting from the research question pursued in this paper, those will not be scrutinized in detail.

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<sup>158</sup> TBTA Art. 1.5.

<sup>159</sup> SPSA Art. 1.4.

<sup>160</sup> World Trade Organization, 'WTO | Intellectual Property - Overview of TRIPS Agreement' (*Trade Topics*) <[https://www.wto.org/english/tratop\\_e/trips\\_e/intel2\\_e.htm](https://www.wto.org/english/tratop_e/trips_e/intel2_e.htm)> accessed 9 February 2021.

<sup>161</sup> 'Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994)' Preamble.

<sup>162</sup> *ibid* Art. 3 + 4.

<sup>163</sup> *ibid* Art. 20.

## 4. Necessity Test of the Nutri-Score

After establishing the applicability of the TBTA, it is imperative to scrutinize the specific requirements for a measure stipulated in this Agreement, which aims at trade liberalisation on the one hand, while on the other allowing Member States to regulate where considered necessary to protect legitimate objectives on a level they deem appropriate <sup>164</sup>. To strike the balance between illegitimate protectionist measures and legitimate exceptions, a so-called Necessity Test has been developed, which reflects conceptions also present in other WTO Agreements <sup>165</sup>. This test shall ensure sufficient regulatory autonomy and competencies for the Members, while simultaneously prevent protectionism and trade distortions <sup>166</sup>.

The necessity test is integrated in Art. 2.2 TBTA as follows:

*“(...) technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate goal, taking account of the risks non-fulfilment would create.  
(...)”*

The particular steps in this evaluation are further explained and defined in the following paragraphs and the legal findings are applied to the Nutri-Score. The first section 4.1 deals with the legitimate objective, followed by the relational analysis of the measure at hand in Chapter 4.2. Additional to the legal examination, the execution and results of the empirical study conducted for this paper are described and evaluated. Afterward, a comparative inquiry assesses whether suitable alternatives are available in section 4.3.

### 4.1 Legitimate Objective

As established by the AB in US-Tuna II, the examination of the legitimate objective is twofold: first, the objective has to be determined, followed by a subsequent establishment of its legitimacy <sup>167 168</sup>

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In assessing the objective of a measure the statement of the Member is not the only aspect to consider. Additionally, the design, architecture, legislative history and operation of the measure

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<sup>164</sup> TBTA Preamble.

<sup>165</sup> Gisele Kapterian, ‘A Critique of the WTO Jurisprudence on Necessity’ (2010) 59 Int. Comp. Law Q. 89, 90.

<sup>166</sup> *ibid.*

<sup>167</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 314.

<sup>168</sup> *Panel Report Australia - Tobacco Plain Packaging* [2018] Panel WT/DS458/R/ WT/DS441/R/ WT/DS435/R/ WT/DS467/R at para. 7.192.

<sup>169</sup> Gabrielle Marceau, ‘The New TBT Jurisprudence in US - Clove Cigarettes, WTO US - Tuna, and US - COOL’ (2013) 8 Asian J. WTO and Int’l Health L and Pol’y 1, 7.

have to be taken into account as well <sup>170 171</sup>. The examination of the goal deals with what is pursued by the measure, rather than how it is implemented <sup>172</sup>. Since the objective is an influential factor later in the analysis and serves as a benchmark for assessing degree of contribution and alternative measures, the importance to clearly specify the objective cannot be overemphasized <sup>173</sup>.

After identifying the objective, its legitimacy has to be determined <sup>174</sup>. The mere text of Article 2.2 TBTA contains examples of legitimate goals, for instance prevention of deceptive practices, protection of human health or the environment. If the objective of the measure is listed among those, its legitimacy is deemed to be proven <sup>175</sup>. However, since the list is not closed and exhaustive, other objectives not included might be legitimate as well <sup>176 177</sup>. How legitimacy is defined in the WTO jurisdiction was subject in the US-Tuna II dispute, where the AB found any aim “*lawful, justifiable or proper*” to be legitimate under Article 2.2 <sup>178</sup>. The only hint regarding illegitimate objectives are given in the preamble of the TBTA, where arbitrary and unjustified discrimination and disguised restrictions to trade are not permitted <sup>179</sup>. Therefore, one can assume that all objectives are legitimate, given they are not obviously discriminatory or protectionist <sup>180</sup>. Until today, no ruling in the WTO has declared an objective as illegitimate <sup>181</sup>, and it is considered unlikely that this will happen in the future, apart from extreme cases where arbitrary and unjustified discrimination are obvious <sup>182</sup>.

The assumed legislative context in which the Nutri-Score will be embedded is the FIR <sup>183</sup>. The objectives of this piece of legislation are “*enabling consumers to make informed choices*” <sup>184</sup>, “*to*

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<sup>170</sup> Appellate Body Report US - COOL [2012] Appellate Body WT/DS384/AB/R at para. 395.

<sup>171</sup> Gabrielle Marceau (n 169) 8.

<sup>172</sup> Panel Report Australia - Tobacco Plain Packaging (n 168) at para. 7.198.

<sup>173</sup> Appellate Body Report US - COOL (n 170) at para. 387.

<sup>174</sup> Panel Report EC - Sardines [2002] Panel WT/DS231/R at para. 7.121.

<sup>175</sup> Appellate Body Report US - COOL (n 170) at para. 372.

<sup>176</sup> Appellate Body Report US - Tuna (II) Mexico (n 71) at para. 313.

<sup>177</sup> Panel Report EC - Sardines (n 174) at para. 7.118.

<sup>178</sup> Appellate Body Report US - Tuna (II) Mexico (n 71) at para. 313.

<sup>179</sup> TBTA Preamble.

<sup>180</sup> Robert Howse, ‘The Sardines Panel and AB Rulings - Some Preliminary Reactions’ (2002) 29 Leg. Issues Econ. Integration 247, 253.

<sup>181</sup> Alejandro Sanchez and Karyn Sandra Aneno, ‘Article 2.2 of the TBT Agreement: More Complicated than Necessary?’ (2016) 11 Global Trade and Cust. J. 369, 370.

<sup>182</sup> Michael Ming Du, ‘Domestic Regulatory Autonomy under the TBT Agreement - From Non-Discrimination to Harmonization’ (2007) 6 Chin. J. Int. Law 269, 296.

<sup>183</sup> European Commission, ‘Inception Impact Assessment - Proposal for a Revision of Regulation (EU) No 1169/2011 on the Provision of Food Information to Consumers -’ (n 58) 1.

<sup>184</sup> Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament

*enable consumers to identify and make appropriate use of a food and to make choices that suit their individual dietary needs.”*<sup>185</sup> and *“to pursue a high level of protection of consumers’ health and interests by providing a basis for final consumers to make informed choices”*<sup>186</sup>.

However, based on the information that accompanies the discussions about and preparations of the introduction of a new mandatory FOPNL, the particular goal of this measure shifts from neutral consumer information toward encouraging more health-focused dietary decisions. Within the Farm to Fork Strategy, the proposed mandatory FOPNL is mentioned in the context of empowering *“consumers to make informed, healthy and sustainable choices”*<sup>187</sup>. In the subsequent annex the wording is similar, as the new labelling element shall *“enable consumers to make health conscious food choices”*<sup>188</sup>.

A more concrete formulation of the goal can be found in the associated Inception Impact Assessment, where the objective of this measure is stated as to *“(…) improve consumers’ understanding of the nutritional value of foods when purchasing them”* and *“facilitating consumers’ healthier food choices”*<sup>189</sup>. Taken into account all the relevant information currently offered by related documents, this thesis considers *“Facilitating consumers’ healthier food choices”* as the primary objective of the measure.<sup>190</sup>

After identifying this, it has to be scrutinized whether this objective is legitimate in the meaning of the TBTA. Even though it broadly relates to goals mentioned in Art. 2.2 TBTA such as prevention of deceptive practices and protection of human health, a more profound analysis of the legitimacy is required at this point. As stated above, the AB in US-Tuna II used the common meaning to define legitimate as *“lawful, justifiable or proper”*<sup>191</sup>. Remarkable is the connection of these words with the

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and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 Text with EEA relevance Preamble 10.

<sup>185</sup> *ibid* Preamble 17.

<sup>186</sup> *ibid* Art. 3.1.

<sup>187</sup> European Commission, ‘Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System’ (n 14) 13.

<sup>188</sup> European Commission, ‘Annex to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Council of the Regions - A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System’ (n 57) 3.

<sup>189</sup> European Commission, ‘Inception Impact Assessment - Proposal for a Revision of Regulation (EU) No 1169/2011 on the Provision of Food Information to Consumers -’ (n 58) 3.

<sup>190</sup> Another objective of the new FOPNL mentioned in the Farm to Fork Strategy-Paper is to encourage food producers to reformulate their products. This aspect is not discussed here.

<sup>191</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 313.

conjunction 'or', indicating the fulfilment of one of these criteria suffices to render an objective legitimate, even though the dictionary does not divide them in this way <sup>192</sup>.

The assumed objective of the policy measure in question to facilitate consumers' healthier food choices is not obviously discriminatory or reveals *de jure* protectionism, since unhealthy food products are marketed by foreign companies as well as by domestic producers <sup>193</sup>. Moreover, this aim is justifiable, because unhealthy dietary habits are strongly linked to multiple detrimental health consequences that entail individual as well as public health impacts <sup>194</sup>. Therefore, encouraging improved dietary choices seems to be a legitimate issue a state is allowed to be concerned about <sup>195</sup>.

Unfortunately, the WTO jurisprudence does not provide guidance regarding a more detailed interpretation of 'lawful' and 'proper' in this context, wherefore a more in depth analysis of the application of these requirements is not possible at this point.

Notwithstanding these limitations and considering the broad interpretation scope applied to the legitimate objective in TBTA disputes <sup>196</sup>, the goal of the Nutri-Score to facilitate consumers' healthier food choices can be deemed legitimate within the meaning of Art. 2.2 TBTA <sup>197</sup>.

Thus, the next question in the Necessity Test is whether the measure applied to achieve this objective is more trade-restrictive than necessary. This is explored in the succeeding passages.

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<sup>192</sup> Alexia Herwig, 'Too Much Zeal on Seals? Animal Welfare, Public Morals, and Consumer Ethics at the Bar of the WTO' (2016) 15 World Trade Rev. 109, 8.

<sup>193</sup> A potential discriminatory treatment under Art. 2.1 TBTA requires further in depth analysis, which is not conducted in this paper.

<sup>194</sup> Diet Collaborators, 'Health Effects of Dietary Risks in 195 Countries, 1990–2017: A Systematic Analysis for the Global Burden of Disease Study 2017' (2019) 393 Lancet 1958, 1969.

<sup>195</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.251.

<sup>196</sup> Gabrielle Marceau (n 169) 9.

<sup>197</sup> Anne Marie Thow and others (n 22) 565.



## 4.2 Relational Analysis

The analysis regarding whether a measure is more trade-restrictive than necessary encompasses a relational part<sup>198</sup>, which can be split in three sub-assessments<sup>199 200</sup>:

- a) the degree of contribution the measure makes to the legitimate objective*
- b) the trade-restrictiveness of the measure*
- c) the nature of the risks at issue and the gravity of consequences*

In this chapter, these aspects are discussed. Additional to the legal evaluation and a brief literature review, the experiment to assess consumers' perception of the interplay between the Nutri-Score and other nutrition-related labelling elements is presented.

### 4.2.1 Contribution to fulfilment

Art. 2.2 TBTA stipulates a technical regulations shall “*fulfil a legitimate objective.*” As observed by the AB in US-Tuna II the common meaning of the word fulfil refers to a complete achievement of an aim<sup>201</sup>. However, the interpretation of this term within the WTO jurisdiction is diverging, since in US-Tuna II and US-COOL the ABs emphasized that the fulfilment of an objective is not an all-or-nothing issue, but rather a matter of contribution to the fulfilment to a greater or lesser degree<sup>202 203 204</sup>.

Thus, the analysis of this requirement focuses on the degree of contribution a technical regulation achieves rather than whether a minimum threshold is satisfied or if the goal is completely accomplished<sup>205 206</sup>. In order to assess this contribution, design, structure, operation and evidence relating to the application have to be taken into account<sup>207</sup>. Depending on these characteristics, the evaluation can be either in quantitative terms where feasible, or in qualitative ones if a precise

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<sup>198</sup> Ming Du, ‘The Necessity Test in the World Trade Law: What Now’ (2016) 15 Chin. J. Int. Law 817, 839.

<sup>199</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 322.

<sup>200</sup> Yoshimichi Ishikawa, ‘Plain Packaging Requirements and Article 2.2 of the TBT Agreement’ (2012) 30 Chinese (Taiwan) Y.B. Int’l L. and Aff 72, 6.

<sup>201</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 315.

<sup>202</sup> *ibid.*

<sup>203</sup> *Appellate Body Report US - COOL* (n 170) at para. 468.

<sup>204</sup> Kamala Dawar and Eyal Ronen, ‘How Necessary: A Comparison of Legal and Economic Assessments - GATT Dispute Settlements under Article XX(B), TBT 2.2 and SPS 5.6’ (2016) 8 Trade L and Dev 1, 25.

<sup>205</sup> *Appellate Body Report US - COOL* (n 170) at para. 468.

<sup>206</sup> Gabrielle Marceau (n 169) 9.

<sup>207</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 317.

quantification is not possible<sup>208</sup>. The mere fact that there is not enough data to establish a measurable effect does not end the inquiry under Art. 2.2 TBTA<sup>209</sup>.

Moreover, the degree of contribution as such is not the decisive factor to establish (non-) compliance with Art. 2.2 TBTA, since this aspect has to be weighed against other factors involved in the Necessity Test<sup>210</sup>. Due to the vague definition of fulfilment, most technical regulations are likely to make at least some contribution to the pursued goal<sup>211</sup>.

#### 4.2.1.1 General Assessment

Applied to the Nutri-Score and inspired by the wording used by the Panel in the US-COOL dispute<sup>212</sup>, under a labelling regime adopted for the purpose of facilitating consumers' healthier food choices, the fulfilment of this objective will depend on the capability of the label to convey comprehensible information about the healthiness of a particular product, which affects consumers in their purchasing and consumption behaviour.

The first question to ask in this context is whether the particular underlying dietary index of a FOPNL is able to discriminate between healthy and unhealthy food products. As already stated in Chapter 1.2, this paper does not aim at discussing this question in depth or scrutinizing dietary guidelines published by governments or organisations from the viewpoint of nutritional science<sup>213</sup>.

Focusing more on the behavioural aspects, various reviews found generally a potential of FOPNL to enhance nutritional knowledge, understanding and subsequently influence purchasing behaviour

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<sup>208</sup> *Appellate Body Report US - COOL (Article 215 - Canada and Mexico)* [2015] Appellate Body WT/DS384/AB/RW at para. 5.211.

<sup>209</sup> *ibid.*

<sup>210</sup> Gabrielle Marceau (n 169) 9.

<sup>211</sup> Alejandro Sanchez and Karyn Sandra Aneno (n 181) 373.

<sup>212</sup> *Panel Report US - COOL* [2002] Panel WT/DS384/R / WT/DS386/R at para. 7.695.

<sup>213</sup> For the FSA-NPS index, which is the base for the Nutri-Score, evidence exists that it is capable to discriminate between different nutritional qualities of food products, admittedly with some limitations. For further information please refer to:  
Chantal Julia and others, 'Validation of the FSA nutrient profiling system dietary index in French adults-findings from SUVIMAX study' (2016) 55 Eur. J. Nutr. 1901  
Fabien Szabo de Edelenyi and others, 'Ability of the Nutri-Score Front-of-Pack Nutrition Label to Discriminate the Nutritional Quality of Foods in the German Food Market and Consistency with Nutritional Recommendations' (2019) 77 Arch. Public Health.  
Charlotte van Tongeren and Leon Jansen, 'Adjustments Needed for the Use of the Nutri-Score in the Netherlands: Lack of Selectivity and Conformity with Dutch Dietary Guidelines in Four Product Groups' (2020) 9 Int. J. Food Sci. Nutr. 33.

toward healthier options<sup>214 215 216 217 218</sup>. However, critics often state the risk of information overload and conflicting messages on food packages<sup>219</sup>. Moreover, misinterpretation and cognitive biases such as anchoring and halo effects might lead to overconsumption of presumably healthy products and thereby contradict the intended objective of the measure<sup>220</sup>. Even though the overall research regarding these possible shortcomings of FOPNL is rare<sup>221</sup>, some evidence exists that such aspects could indeed be problematic<sup>222 223</sup>.

Another issue is the transferability of laboratory results to real life purchasing and consumption behaviour, especially long term and for different groups of the population<sup>224 225 226 227 228</sup>.

Thus, a contribution to fulfilment of the objective seems neither precluded nor guaranteed.

Turning to a more specific analysis for the FOPNL variant focused on in this paper and in order to give an overview over the current state of research regarding the Nutri-Score's ability to facilitate consumers' healthier food choices a literature review is conducted, according to the parameters laid out on the methodology chapter 1.3.

The biggest experimental study available assessing the effectiveness of 5 different FOPNL regarding consumer attitude, understanding and impact on food choice is the FOP-ICE study, conducted by Egnell et al. in 12 countries (including non-European ones) with 12,015 participants<sup>229</sup>. The study was designed as an online questionnaire with ranking and choice tasks and found that all FOPNL

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<sup>214</sup> H. Croker and others, 'Front of Pack Nutritional Labelling Schemes: A Systematic Review and Meta-Analysis of Recent Evidence Relating to Objectively Measured Consumption and Purchasing' (2020) 2020 J Hum Nutr Diet 518, 533.

<sup>215</sup> M. Cecchini and L. Warin (n 12) 205.

<sup>216</sup> Rodrigo Feteira-Santos and others (n 119) 31.

<sup>217</sup> Naglaa H. El-Abbadi and others, 'Nutrient Profiling Systems, Front of Pack Labeling, and Consumer Behavior' (2020) 22 Curr. Atheroscler. Rep. 36, 35.

<sup>218</sup> S Storckdieck genannt Bonsmann and others, 'Front-of-Pack Nutrition Labelling Schemes: A Comprehensive Review' (Publications Office of the European Union 2020) EUR 29811 166.

<sup>219</sup> Ellen Van Kleef and Hans Dagevos, 'The Growing Role of Front-of-Pack Nutrition Profile Labeling: A Consumer Perspective on Key Issues and Controversies' (2015) 55 Crit Rev Food Sci Nutr. 291, 295.

<sup>220</sup> *ibid* 296.

<sup>221</sup> S Storckdieck genannt Bonsmann and others (n 218) 148.

<sup>222</sup> Zenobia Talati and others, 'Do Health Claims and Front-of-Pack Labels Lead to a Positivity Bias in Unhealthy Foods?' (2016) 8 Nutrients 787, 12.

<sup>223</sup> Svetlana Bialkova, Klaus G. Grunert, and Hans van Trijp, 'Standing out in the Crowd: The Effect of Information Clutter on Consumer Attention for Front-of-Pack Nutrition Labels' (2013) 41 Food Policy 65, 71.

<sup>224</sup> M. Cecchini and L. Warin (n 12) 208.

<sup>225</sup> H. Croker and others (n 214) 534.

<sup>226</sup> Rodrigo Feteira-Santos and others (n 119) 35.

<sup>227</sup> Naglaa H. El-Abbadi and others (n 217) 35.

<sup>228</sup> S Storckdieck genannt Bonsmann and others (n 218) 155.

<sup>229</sup> Manon Egnell and others, 'Objective Understanding of Front-of-Package Nutrition Labels: An International Comparative Experimental Study across 12 Countries' (2018) 10 Nutrients 1542, 3.

improved the correct healthiness evaluation of products and that among those FOPNL the Nutri-Score led to the biggest improvements <sup>230</sup>.

The data obtained in this exhaustive study was further examined by Talati et al., with a bigger focus on the influence on the food choice <sup>231</sup>. It was also established that all FOPNL favourably influenced food choices, with the Nutri-Score emerging as the most influential one <sup>232</sup>. When focusing on consumer perception, the researchers found that consumers have a general demand for FOPNL <sup>233</sup>, however, in contrast to the promising findings in the assessments before, consumers did not favour the Nutri-Score and ranked this label as the least trusted and least desired to be compulsory <sup>234</sup> because such aggregated schemes might exclude information and can be perceived as oversimplified <sup>235</sup>.

Based on this study design, smaller experiments were conducted in various countries to verify the outcomes. Similar to the findings in the original FOP-ICE study, they concluded positive impacts of FOPNL in general and the Nutri-Score in particular on consumers' ability to identify healthy food options <sup>236 237 238 239</sup>.

Other studies with different designs scrutinising the impact of FOPNL on consumer understanding and food selection concluded positive impacts of FOPNL in general <sup>240 241 242</sup>. However, the performance of the Nutri-Score varies among them. In comparison with other FOPNL, a Swiss

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<sup>230</sup> *ibid* 10.

<sup>231</sup> Zenobia Talati and others, 'Food Choice Under Five Front-of-Package Nutrition Label Conditions: An Experimental Study Across 12 Countries' (2019) 109 *Am. J. Public Health* 1770, 1771.

<sup>232</sup> *ibid* 1773.

<sup>233</sup> Zenobia Talati and others, 'Consumers' Perceptions of Five Front-of-Package Nutrition Labels: An Experimental Study Across 12 Countries' (2019) 11 *Nutrients* 1934, 11.

<sup>234</sup> *ibid*.

<sup>235</sup> *ibid* 12.

<sup>236</sup> Manon Egnell and others, 'Objective Understanding of the Nutri-Score Front-of-Pack Label by European Consumers and Its Effect on Food Choices: An Online Experimental Study' (2020) 17 *Int. J. Behav. Nutr. Phys. Act.* 146, 9.

<sup>237</sup> Manon Egnell and others, 'Compared to Other Front-of-Pack Nutrition Labels, the Nutri-Score Emerged as the Most Efficient to Inform Swiss Consumers on the Nutritional Quality of Food Products' (2020) 15 *PLoS One*, 11.

<sup>238</sup> Morgane Fialon and others, 'Effectiveness of Different Front-of-Pack Nutrition Labels among Italian Consumers: Results from an Online Randomized Controlled Trial' (2020) 12 *Nutrients* 2307, 8.

<sup>239</sup> Stefanie Vandejvere and others, 'Consumers' Food Choices, Understanding and Perceptions in Response to Different Front-of-Pack Nutrition Labelling Systems in Belgium: Results from an Online Experimental Study' (2020) 78 *Arch Public Health* 30, 6.

<sup>240</sup> Osvaldo Santos and others, 'Impact of Different Front-of-Pack Nutrition Labels on Online Food Choices' (2020) 154 *Appetite* 104795, 2.

<sup>241</sup> Joyce de Temmerman and others, 'The Impact of the Nutri-Score Nutrition Label on Perceived Healthiness and Purchase Intentions' (2020) 15 *Appetite* 157, 1.

<sup>242</sup> Désirée Hagmann and Michael Siegrist, 'Nutri-Score, Multiple Traffic Light and Incomplete Nutrition Labelling on Food Packages: Effects on Consumers' Accuracy in Identifying Healthier Snack Options' (2020) 83 *Food Qual Prefer* 103894, 2.

experiment found a superior performance of the Nutri-Score among consumers in Switzerland <sup>243</sup>, while Portuguese participants in another study favoured the MTL scheme, even though not to a great extent <sup>244</sup>.

Unfortunately, no profound and exhaustive meta-analysis studying the effects of the Nutri-Score is currently available. However, a narrative review examined the effectiveness of different FOPNL to help consumers accurately identify healthy foods and the likelihood these are indeed purchased <sup>245</sup>. 17 studies were included, among them also the here presented FOP-ICE study, and the main outcome of the review is the lack of consistency among them <sup>246</sup>. While 12 studies found clear evidence for a positive influence of FOPNL on shoppers, four couldn't find such effects and one study describes inconsistent results <sup>247</sup>. Nevertheless, so the conclusion, FOPNL seem to be helpful and easy labels such as the Nutri-Score more effective than other variants <sup>248</sup>.

In order to narrow the research gap regarding real life influence on purchase behaviour, Dubois et al. performed an experiment in French supermarkets <sup>249</sup> to assess the influence of the display of different FOPNL on the purchase incidences and nutritional baskets of consumers <sup>250</sup>. The researchers concluded that

*" (...) compared to the encouraging findings of the laboratory-based studies, (...) FOPNL had disappointingly modest effects on the nutritional quality of food purchased in four categories in real-life grocery shopping conditions." <sup>251</sup>*

Notwithstanding these overall results, among the FOPNL studied the Nutri-Score evolved as more effective than the other ones <sup>252</sup>.

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<sup>243</sup> ibid 8.

<sup>244</sup> Osvaldo Santos and others (n 240) 9.

<sup>245</sup> Norman J. Temple, 'Front-of-Package Food Labels: A Narrative Review' (2020) 144 Appetite 104485, 1.

<sup>246</sup> ibid 3.

<sup>247</sup> ibid 4.

<sup>248</sup> ibid.

<sup>249</sup> Pierre Dubois and others, 'Effects of Front-of-Pack Labels on the Nutritional Quality of Supermarket Food Purchases: Evidence from a Large-Scale Randomized Controlled Trial' (2021) 49 Acad. Mark. Sci. Rev. 119, 123.

<sup>250</sup> ibid 127.

<sup>251</sup> ibid 132.

<sup>252</sup> ibid.

Apart from consumer oriented studies, Kupirovič et al. focussed on the question whether different nutrition labelling schemes may display contradictory information for consumers<sup>253</sup> by comparing the requirements of FOPNL, health symbols and nutrient profile models<sup>254</sup> and concluded that there is potential for conflicting information<sup>255</sup>.

The literature review reveals great research interest in the field of the Nutri-Score and its ability to favourably influence consumers' healthiness perception and food choices. However and notwithstanding the positive results most experimental studies obtained, it is acknowledged that the data is preliminary and in most cases not transferable to real life environment<sup>256 257 258</sup>.

Most experimental studies, such as the FOP-ICE study or smaller studies inspired by this design focus on the comparison of different FOPNL and do not include other nutrition information on packages available to consumers in real purchase situations and whether these information interfere with the understanding of the FOPNL. Even though Kupirovič et al. scrutinized whether FOPNL might lead to conflicting information on food packages, the aim of this study was rather analytical and did neither include mandatory labelling elements nor did it assess consumer perception and reaction. Thus, this study cannot be used to transfer its findings to other labelling elements. Although some studies have been conducted to scrutinize the interplay between some FOPNL and other nutrition labelling elements, those did not specifically test the Nutri-Score and were not conducted with European participants<sup>259 260 261 262</sup>, resulting in limited transferability. The only European study including the Nutri-Score known so far exclusively assesses other Front-Of-Pack information such as Nutrition

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<sup>253</sup> Urška Pivk Kupirovic and others, 'Facilitating Consumers Choice of Healthier Foods: A Comparison of Different Front-of-Package Labelling Schemes Using Slovenian Food Supply Database' (2020) 9 *Foods* 399, 3.

<sup>254</sup> *ibid.*

<sup>255</sup> *ibid* 13.

<sup>256</sup> Norman J. Temple (n 245) 6.

<sup>257</sup> Manon Egnell and others, 'Objective Understanding of Front-of-Package Nutrition Labels: An International Comparative Experimental Study across 12 Countries' (n 229) 12.

<sup>258</sup> Joyce de Temmerman and others (n 241) 8.

<sup>259</sup> Beatriz Franco-Arellano and others, 'Influence of Front-of-Pack Labelling and Regulated Nutrition Claims on Consumers' Perceptions of Product Healthfulness and Purchase Intentions: A Randomized Controlled Trial' (2020) 149 *Appetite*, 2.

<sup>260</sup> Ninya Maubach, Janet Hoek, and Damien Mather, 'Interpretive Front-of-Pack Nutrition Labels. Comparing Competing Recommendations' (2014) 82 *Appetite* 66, 68.

<sup>261</sup> Rachael McLean, Janet Hoek, and Duncan Hedderly, 'Effects of Alternative Label Formats on Choice of High- and Low-Sodium Products in a New Zealand Population Sample' (2012) 15 *Public Health Nutr.* 783, 784.

<sup>262</sup> Zenobia Talati and others, 'The Combined Effect of Front-of-Pack Nutrition Labels and Health Claims on Consumers' Evaluation of Food Products' (2016) 53 *Food Qual Prefer* 57, 60.

Claims and does not include Back-Of-Pack information <sup>263</sup>. Researchers have already acknowledged the lack of data regarding these possible effects <sup>264</sup>.

Consequently, to assess the possible capability of the Nutri-Score to achieve its goal, the conduct of an empirical study to estimate those potential interferences is deemed necessary and presented in the following chapter.

#### 4.2.1.2 Experiment

##### *A) Context*

The ability of consumers to understand the scheme is an imperative prerequisite for any label to effectively influence food purchases and consumption in the desired direction <sup>265</sup> and must be assessed while taking other forms of information on food packaging into consideration <sup>266</sup>.

Additionally, in the WTO dispute settlement system a measure has to be evaluated within the broader regulatory context it operates in <sup>267</sup>. Therefore, it is essential to establish that even if additional information in form of other nutrition-related labelling elements are available, consumer still use the Nutri-Score as a decisive tool to determine the healthiness and nutritional quality of a product and are not particularly influenced by the interplay of possibly contradictory messages.

##### *B) Aim & Methodology*

The aim of the empirical study is to assess whether participants use the Nutri-Score as a decisive tool to evaluate healthiness and related aspects of products, even in presence of other, seemingly contradictory information conveyed by Nutrition Tables, Nutrition Claims or Ingredient Lists.

##### *Stimuli*

In order to study these interplays, three independent online questionnaires were designed, delivered to three different groups of people. The product chosen as an example was granola, since this is a well-known product group and entails products with very different nutritional qualities. The structure in all three questionnaires was the same, only the additional information next to the Nutri-Score changed and was either information about nutrition tables (higher or lower fat content), vitamins and mineral present (claim or no claim) or absent or ingredient lists (short or long). The

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<sup>263</sup> Cayetano Medina-Molina and Benito Pérez-González, 'Nutritional Labelling and Purchase Intention Interaction of Interpretative Food Labels with Consumers' Beliefs and Decisions' (2021) 123 Br Food J, 756.

<sup>264</sup> S Storckdieck genannt Bonsmann and others (n 218) 157.





<sup>265</sup> Manon Egnell and others, 'Consumers' Responses to Front-of-Pack Nutrition Labelling: Results from a Sample from The Netherlands' (2019) 11 Nutrients 1817, 12.

<sup>266</sup> Gyorgy Scrinis and Christine Parker, 'Front-of-Pack Food Labeling and the Politics of Nutritional Nudges' (2016) 38 Law and Pol'y 234, 244.

<sup>267</sup> Panel Report Australia - Tobacco Plain Packaging (n 168) at para. 7.1729.

crucial element in the design was the potential discrepancy between the Nutri-Score rating (B or D) and the quality of the additional information for some products. For this purpose each survey followed a 2 by 2 within-subjects experimental design where the two levels of the Nutri-Score and the two levels of the other information were combined to create four versions: two more congruent and two more incongruent. In order to avoid making the combinations too obvious, different graphic designs of the same granola product (with coconut, seeds, and cinnamon) were used. In detail, the following products were presented to the participants <sup>268</sup>:

Table 3: Products presented in the Questionnaire Nutri-Score & Nutrition Tables

Nutrition Table																																					
B-low fat <i>B-LF</i>	D-high fat <i>D-HF</i>																																				
 <table border="1"> <thead> <tr> <th></th><th>Per 100 g</th></tr> </thead> <tbody> <tr> <td>Energy</td><td>1598 kJ 382 kcal</td></tr> <tr> <td>Fat</td><td>1.1 g</td></tr> <tr> <td>Of which saturates</td><td>0.4 g</td></tr> <tr> <td>Carbohydrates</td><td>77.9 g</td></tr> <tr> <td>Of which sugars</td><td>19.9 g</td></tr> <tr> <td>Fibre</td><td>7.4 g</td></tr> <tr> <td>Protein</td><td>9.1 g</td></tr> <tr> <td>Salt</td><td>0.5 g</td></tr> </tbody> </table>		Per 100 g	Energy	1598 kJ 382 kcal	Fat	1.1 g	Of which saturates	0.4 g	Carbohydrates	77.9 g	Of which sugars	19.9 g	Fibre	7.4 g	Protein	9.1 g	Salt	0.5 g	 <table border="1"> <thead> <tr> <th></th><th>Per 100 g</th></tr> </thead> <tbody> <tr> <td>Energy</td><td>1840 kJ 440 kcal</td></tr> <tr> <td>Fat</td><td>15.5 g</td></tr> <tr> <td>Of which saturates</td><td>10.3 g</td></tr> <tr> <td>Carbohydrates</td><td>61.7 g</td></tr> <tr> <td>Of which sugars</td><td>2.1 g</td></tr> <tr> <td>Fibre</td><td>7.4 g</td></tr> <tr> <td>Protein</td><td>9.1 g</td></tr> <tr> <td>Salt</td><td>0.5 g</td></tr> </tbody> </table>		Per 100 g	Energy	1840 kJ 440 kcal	Fat	15.5 g	Of which saturates	10.3 g	Carbohydrates	61.7 g	Of which sugars	2.1 g	Fibre	7.4 g	Protein	9.1 g	Salt	0.5 g
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<sup>268</sup> The questionnaires can be found in the Annex. There the pictures are also displayed in a bigger format to enhance readability.



Table 4: Products presented in the Questionnaire Nutri-Score & Nutrition Claims. The Claim was “Contains Vitamin B12, Folate and Iron”.

Nutrition Claims			
B-no claim <i>B-no</i>	D-yes Claim <i>D-yes</i>	B-yes claim <i>B-yes</i>	D-no claim <i>D-no</i>
			

Table 5: Products presented in the Questionnaire Nutri-Score & Ingredient Lists

Ingredient Lists			
B-long ingredient list <i>B-long</i>	D-short ingredient list <i>D-short</i>	B-short ingredient list <i>B-short</i>	D-long ingredient list <i>D-long</i>
 <p><b>Ingredient List:</b> whole meal wheat flour, whole meal oat flour, sugar, whole meal rye flour, wheat flour, wheat starch, sunflower oil, wheat syrup, agave syrup, whole meal corn flour, whole meal rice flour, seeds (sunflower, pumpkin), coconut flakes, dried wheat syrup, salt, natural flavourings, caramelised sugar, emulsifier: lecithin, antioxidant: tocopherol-rich extracts, cinnamon</p>	 <p><b>Ingredient List:</b> wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, coconut oil, salt, cinnamon</p>	 <p><b>Ingredient List:</b> whole meal wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, sunflower oil, salt, cinnamon</p>	 <p><b>Ingredient List:</b> whole meal wheat flour, sugar, rice flour, coconut oil, wheat starch, corn grit, calcium carbonate, glucose syrup, seeds (sunflower, pumpkin), coconut flakes, emulsifier: lecithin, salt, maltodextrin, natural flavouring, caramel sugar syrup, cinnamon, baking agent: sodium carbonate, colouring agent: carotin, antioxidant: tocopherol-rich extracts</p>

### Recruitment and eligibility

The questionnaires were designed with Qualtrics and available from the 02.12.20 to the 22.12.20.

The distribution took place via mailing lists available to the Department of Social Sciences of Wageningen University and Research. Additionally, participants from the personal environment of the author were recruited. No particular inclusion criteria were given, apart from being more than 18 years old, since it was assumed all consumers would be able to make a subjective judgement on the healthiness of the products based on the information presented. Respondents were randomly allocated to one of the three survey versions.

### *Procedure*

After being informed about confidentiality and voluntariness, participants were first asked to rank the four products according to their perceived healthiness from 1 to 4 (1= most healthiest, 4 = least healthiest). The next section included three questions, whereby respondents evaluated the four products on a 4-point scale according to their perception about the content of vitamin and minerals, nutritional quality and ability to prevent diet-related diseases (1= poor, 2= somewhat low, 3=somewhat high, 4= very high, 5 = I don't know). Following these three questions, respondents were asked to write any free associations that came in mind seeing each of the products.

After assessing the products, the respondents were asked about their individual information seeking behaviour. To begin with, they had to state which additional information they would search for in a real life purchasing environment. Moreover, it was asked how often they consult Nutrition Information, Ingredient Lists and Health & Nutrition Claims when buying a product (1=never, 2= rarely, 3=occasionally, 4= most of the time, 5=always).

Furthermore, it was controlled whether the participants had seen the Nutri-Score on the packages in the previous tasks and whether they self-reportedly know its meaning. Additionally, the importance of a healthy diet had to be stated (1= not at all important, 2=slightly important, 3=moderately important, 4= very important, 5=extremely important).

Finally, sociodemographic data were collected. Respondents had to state their gender, age range, highest level of education and country of residence.

### *Data analyses*

Friedman Non-parametric tests were used for the ranking questions as well as for the assessment on 4-point scales to investigate whether the products differed significantly in the evaluations. Multiple pairwise comparisons using Nemenyi's procedure/two tailed tests were carried out to find out if differences between products were statistically significant.

Answers regarding information seeking behaviour were descriptively evaluated.

Other gathered information such as recognition of the label in the previous questions, knowledge about Nutri-Score, importance of healthy diet and sociodemographic data were evaluated by a test of independence.

As common, the critical p value in all the analyses is  $p < .05$ .

### *C) Results*

The total number of respondents per questionnaire are as follows:

- Questionnaire Nutri-Score & Nutrition Tables    N= 57
- Questionnaire Nutri-Score & Nutrition Claims    N= 59
- Questionnaire Nutri-Score & Ingredient Lists    N= 53

A minority of respondents did not fill in some information, in this case their completed experimental data was still considered to have a sample size as large as possible for each dependent variable/question. This explains possible discrepancies in the total number of answers for some tasks.

#### Selection

Eligible responses were kept according to the following criteria: they live currently in the EU and the time for the completion of the questionnaire did not exceed 180s. Also, random answers indicated by the patterns of scores were removed. Therefore, the total eligible amount of answers is not evenly distributed between the questionnaires.

The sociodemographic data of the participants are summarised in Table 6. As it can be seen, the sociodemographic distribution of participants in the three surveys did not differ significantly.

Table 6: Sociodemographic data

	Questionnaire Nutri-Score & Nutrition Tables	Questionnaire Nutri-Score & Nutrition Claims	Questionnaire Nutri-Score & Ingredient Lists	Chi-square
<b>Age</b>				<b><i>p value .271 ns</i></b>
18 – 30 years	31	23	21	
31 – 40 years	4	8	4	
41 – 50 years	2	6	3	
51 -60 years	7	12	9	
Above 60 years	4	6	0	
<b>Gender</b>				<b><i>p value .281ns</i></b>
Male	9	12	14	
Female	38	42	23	
Non-binary	1	1	0	
Prefer not to say	0	0	0	
<b>Education</b>				<b><i>p value .288 ns</i></b>
High-School	6	5	4	
University Entry Diploma	6	2	2	
Bachelor's degree	20	21	17	
Master's degree	15	21	10	
PhD	0	3	0	
Prefer not to say	1	3	4	
<b>Country of residence</b>				<b><i>p value .387 ns</i></b>
Netherlands	35	47	31	
Germany	11	8	5	
Other EU country	2	0	1	

## Healthiness Ranking

### *Questionnaire Nutri-Score & Nutrition Tables*

The Friedman test reveals a Chi square value of 28.22,  $p < .0001$ . The Nemenyi's procedure and pairwise comparison show significant differences between Nutri-Score B and D but not between the additional nutritional information High Fat or Low Fat (Table 7). Therefore, it can be concluded that participants used the Nutri-Score as a decisive tool in this task and were not influenced by the fat values in the Nutrition Tables.

*Table 7: Results from the pairwise comparisons following the Nemenyi's procedure for Healthiness Ranking in the questionnaire Nutri-Score & Nutrition Tables*

Sample	Frequency	Sum of ranks	Mean of ranks
B-LF	57	117.00	2.05 A
B-HF	57	118.00	2.07 A
D-HF	57	158.00	2.77 B
D-LF	57	177.00	3.11 B

*Note: The abbreviations B-LF/B-HF and D-LF/D-HF refer to the Nutri-Score (B or D) and additional information (LF: Low Fat; HF: High-Fat). A low rank number indicates a higher healthiness perception. Different letters next to the mean ranks indicate differences between the products at  $p < .05$*

### *Questionnaire Nutri-Score & Nutrition Claims*

The results for the questionnaire additionally displaying Nutrition Claims are similar: The Friedman test Chi square value is 73.39,  $p < .0001$ . The Nemenyi's procedure shows separate groups for Nutri-Score B and D. Additionally, the pairwise comparisons shows significant differences between B and D but not between the additional information (claim vs. no-claim). Therefore, participants in this group seem to have used the Nutri-Score as the decisive tool in this task as well.

Table 8: Results from the pairwise comparisons following the Nemenyi's procedure for Healthiness Ranking in the questionnaire Nutri-Score & Nutrition Claims

Sample	Frequency	Sum of ranks	Mean of ranks
B-yes	59	96.00	1.63 A
B-no	59	116.00	1.97 A
D-yes	59	181.00	3.07 B
D-no	59	197.00	3.34 B

Note: The abbreviations B-no/B-yes and D-no/D-yes refer to the Nutri-Score (B or D) and additional information (no: no Nutrition Claim; yes: Nutrition Claim). A low rank number indicates a higher healthiness perception. Different letters next to the mean ranks indicate differences between the products at  $p < .05$

### Questionnaire Nutri-Score & Ingredient Lists

The outcome of the survey including ingredient lists is not as unequivocal. The products differ significantly, the Chi square value is 53.99,  $p < .0001$ . The two products with Nutri-Score label B rank first in healthiness, but the short ingredient list is ranked as significantly healthier than the version with the long list. This last one does not differ significantly from the product with the D label and short list but from the product with the D label and long list, which is perceived significantly less healthier than the rest. More details are presented in Table 9:

Table 9: Results from the pairwise comparisons following the Nemenyi's procedure for Healthiness Ranking in the questionnaire Nutri-Score & Ingredient Lists

Sample	Frequency	Sum of ranks	Mean of ranks
B-short	53	82.00	1.55 A
B-long	53	125.00	2.36 B
D-short	53	146.00	2.76 B C
D-long	53	177.00	3.34 C

Note: The abbreviations B-short/B-long and D-short/D-long refer to the Nutri-Score (B or D) and additional information (Short: Short Ingredient List; Long: Long ingredient List). A low rank number indicates a higher healthiness perception. Different letters next to the mean ranks indicate differences between the products at  $p < .05$

These results show that participants, if confronted with additional information in form of Nutrition Tables or Nutrition Claims were clearly able to rank the products on a healthiness scale according to their Nutri-Score and did not orient toward the other messages provided. The data obtained from the survey displaying supplementarily Ingredient Lists suggests the same, however, respondents also used the length of the ingredient list as a proxy for healthiness, being shorter perceived as healthier.

### Perception Tasks

In the following task participants were asked to rate the assumed vitamin and mineral content, the nutritional quality and the ability to prevent diet-related diseases of the products on a 4-point intensity scale, 1 being the lowest and 4 being the highest level of those attributes. Sorted by the additional information provided, the following results could be identified:

#### *Questionnaire Nutri-Score & Nutrition Table*

The question about the estimated vitamin and mineral content delivers a Chi-square value of 24.83,  $p < .0001$ . The participants ranked B-HF highest and B-LF second, so they acted according to the expected outcome. However, the statistical difference between B-LF and D-HF/D-LF is not established (Table 10).

The results for the nutritional quality are similar to the vitamin and mineral ranking task: a Chi-square value of 24.83,  $p < .0001$  and participants ranked Nutri-Score B-HF first and B-LF second, however, no statistically significant difference could be observed between B-LF and D-HF/ D-LF, as can be seen in Table 10 below.

The evaluation of the question asking about the assumed ability to prevent diet-related diseases shows the same results as the previous ranking tasks. A Chi-square value of 24.83,  $p < .0001$  and participants favoured B-HF as the option receiving the best rank. No statistically significant difference between B-LF and D-HF/D-LF could be established (Table 10).

Table 10: Results from the pairwise comparisons following the Nemenyi's procedure in the questionnaire Nutri-Score & Nutrition Tables

Sample	Vitamin and Mineral content			Nutritional Quality			Ability to prevent diet-related diseases		
	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>
D-LF	36	74.50	2.07 A	36	74.50	2.07 A	36	74.50	2.07 A
D-HF	36	78.00	2.17 A	36	78.00	2.17 A	36	78.00	2.17 A
B-LF	36	100.00	2.78 A B	36	100.00	2.78 A B	36	100.00	2.78 A B
B-HF	36	107.50	2.99 B	36	107.50	2.99 B	36	107.50	2.99 B

Note: The abbreviations B-LF/B-HF and D-LF/D-HF refer to the Nutri-Score (B or D) and additional information (LF: Low Fat; HF: High-Fat). A higher the rank mean indicates a higher perception of those attributes. Different letters next to the mean ranks indicate differences between the products at  $p < 0.05$ .

In conclusion, participants always ranked the products displaying Nutri-Score B highest and were statistically significantly able to identify the healthiest product. However, in the intermediate area decisions were not as clear, thus one can assume the additional information displayed at least influenced some of the respondents.

#### Questionnaire Nutri-Score & Nutrition Claims

The results regarding assumed vitamin and mineral content show a Chi-square value of 41.42,  $p < .0001$  and participants clearly identified B-yes as containing the highest amount vitamins and minerals and D-no as the lowest. Second ranks D-yes and B-no is third. Table 11 displays the groups.

If evaluating the question regarding the nutritional quality, a Chi-square value of 59.81,  $p < .0001$  is calculated. The participants attributed the highest nutritional quality to the products displaying Nutri-Score B. Interestingly, the Nutri-Score D product displaying a claim ranked lower than the Nutri-Score D product without a claim. However, the differences in ranking between the groups B and D-Nutri-Score are as expected, as Table 11 shows.

The answers regarding the assumed ability to prevent diet-related diseases show for the non-parametric Friedman test a Chi-square value of 54.48,  $p < .0001$  and even though the participants ranked B-yes first and B-no second, the difference between B-no and D-yes is not statistically significant, as can be seen in Table 11.



Table 11: Results from the pairwise comparisons following the Nemenyi's procedure in the questionnaire Nutri-Score & Nutrition Claims

Sample	Vitamin and Mineral content			Nutritional Quality			Ability to prevent diet-related diseases		
	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>
D-no	50	90.50	1.81 A	58	117.00	2.02 A	51	97.50	1.91 A
B-no	50	123.00	2.46 A B	58	170.50	2.94 B	51	141.50	2.78 B C
D-yes	50	127.00	2.54 B C	58	113.00	1.95 A	51	111.00	2.18 A B
B-yes	50	159.50	3.19 C	58	179.50	3.10 B	51	160.00	3.14 C

Note: The abbreviations B-no/B-yes and D-no/D-yes refer to the Nutri-Score (B or D) and additional information (No: No Nutrition Claim; Yes: Nutrition Claim). A higher the rank mean indicates a higher perception of those attributes. Different letters next to the mean ranks indicate differences between the products at  $p < 0.05$ .

All in all, participants identified the product with Nutri-Score B and the positive additional information always as the best option. If asked for the vitamin and mineral content respondents focused more on claims to evaluate this attribute than on the Nutri-Score. This perception does not interfere with the evaluation of the other attributes such as nutritional quality and ability to prevent diet-related diseases. Here, the answers show an orientation toward the Nutri-Score, even though the statistical calculation reveals some possibilities for interaction, since the groups sometimes overlap between the products.

#### Questionnaire Nutri-Score & Ingredient Lists

The question about the assumed vitamin and mineral content reveals a Chi-square value of 15.78,  $p .001$ . B-short is ranked first, following B-long second, however, in the same group with D-long, so that a clear statistically significant difference between those two cannot be established. Surprisingly, D-short ranks lowest, as displayed in Table 12.

The analysis for the nutritional quality shows a Chi-square value of 15.78,  $p .001$ . Diverging from the expected outcome, participants ranked B-long higher than B-short, the latter sharing a group D-short. D-long is attributed with the lowest nutritional quality. Again, there is no statistical difference between B-short and D-short/D-long (Table 12).

The presumed ability to prevent diet-related diseases shows a Chi-square value of 33.74,  $p < .0001$  and is diverging from the expected outcome since participants ranked B-long higher than B-short, the latter sharing a group D-long. D-short is ranked lowest, as Table 12 demonstrates.

Table 12: Results from the pairwise comparisons following the Nemenyi's procedure in the questionnaire Nutri-Score & Ingredient Lists

Sample	Vitamin and Mineral content			Nutritional Quality			Ability to prevent diet-related diseases		
	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>	<i>n</i>	<i>Sum of ranks</i>	<i>Mean of ranks</i>
D-short	47	99.50	2.12 A	47	109.50	2.33 A B	50	97.00	1.94 A
D-long	47	109.50	2.33 A B	47	99.50	2.12 A	50	122.50	2.45 A B
B-long	47	125.50	2.67 A B	47	135.50	2.88 B	50	153.00	3.06 B
B-short	47	135.50	2.88 B	47	125.50	2.67 A B	50	127.50	2.55 A B

Note: The abbreviations B-long/B-short and D-long/D-short refer to the Nutri-Score (B or D) and additional information (long: Long Ingredient List; Short: Short Ingredient List). A higher the rank mean indicates a higher perception of those attributes. Different letters next to the mean ranks indicate differences between the products at  $p < 0.05$ .

Again, products presenting Nutri-Score B are ranked higher in all three questions than products with Nutri-Score D. Surprisingly, B-long received a higher score than B-short two times. In line with the findings in the other questionnaires of these study, the intermediate area is not as statistically sound as the clear allocation of best and worse, revealing some potential for conflicting messages.

### Information seeking behaviour

When asked about their regular information seeking behaviour, most people tend to consult the ingredient list, followed by brands and nutrition claims. Only a minority stated to actively search for other nutrition-related information in form of particular nutritional values or the nutrition table in general (Table 13).

Table 13: Information seeking behaviour

<b>Information normally consulted (multiple answers possible)</b>	Questionnaire Nutri-Score & Nutrition Tables	Questionnaire Nutri-Score & Nutrition Claims	Questionnaire Nutri-Score & Ingredient lists
Ingredient lists	42	47	47
Brand	13	13	12
Nutrition & Health Claims	11	22	11
Other	14	14	20
Thereof nutrition-related	10	5	12
None	0	0	0

## Other behavioural aspects

The results of the behavioural aspects can be found hereinafter in Table 14:

*Table 14: Other behavioural aspects*

	Questionnaire Nutri-Score & Nutrition Tables	Questionnaire Nutri-Score & Nutrition Claims	Questionnaire Nutri-Score & Ingredient lists	Chi-square
<b>Recognition of Nutri-Score</b>				<b><i>p value .003</i></b>
Yes	36	53	48	
No	12	2	5	
<b>Self-reported knowledge about the Nutri-Score</b>				<b><i>p value .204</i></b>
Definitely yes	10	15	16	
I guess so	24	31	28	
I guess not	8	8	8	
Definitely not	6	1	1	
<b>Importance of healthy diet</b>				<b><i>p value .667</i></b>
Extremely important	4	4	2	
Very important	20	26	30	
Moderately important	20	20	19	
Slightly important	3	5	2	
Not all important	1	0	0	

The results show one significant p-value when it comes to the recognition of the Nutri-Score in the previous questions. 25% of the participants answering the Questionnaire Nutri-Score & Nutrition Tables did not notice the label when conducting the tasks.

The other questions asked in this part did not lead to significant p-values.

#### D) Discussion

The overall results of this study indicate no significant interplay between the Nutri-Score and other nutrition-related labelling elements, when it comes to the consumer perception of healthiness, vitamin and mineral content, nutritional quality and ability to prevent diet-related diseases. Only if confronted with Nutrition Claims and asked about the vitamin and mineral content, participants clearly orient toward the claims, which is not problematic in itself, since the Nutri-Score does not take vitamins and minerals into account. In all cases participants were clearly able to choose a product with Nutri-Score B as the healthiest and Nutri-Score D as the least healthiest version.

Even though both products presenting Nutri-Score B were mostly ranked and perceived healthier and more positive than the products displaying Nutri-Score D, the results in the intermediate area between products with a Nutri-Score B and negative additional information and the product with Nutri-Score D and positive additional information are often not statistically sound. Thus, it can be assumed that in this range potential for conflicting perception exists.

Worth mentioning is the observation that respondents favoured the high-fat variants over the low-fat ones in both Nutri-Score categories in the Perception Task, although not during the Healthiness assessment in task one. This might be related to the respective sugar values displayed. The high fat-examples in this questionnaire had less sugar, whereas the low fat-variants contained more. Taken into account the concerns many consumers currently have related to sugar, this outcome does seem to have less to do with the Nutri-Score itself and more with the trade-offs between fat and sugar <sup>269</sup> <sup>270</sup>.

The findings of this study are partially in line with previous studies assessing such interactions. In many cases, researchers found limited interplay between FOPNL and Nutrition/Health Claims <sup>271</sup> or even assessed a positive influence of FOPNL by making consumer less prone to positivity biases

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<sup>269</sup> Rod Addy, 'Food Standards Agency Survey Highlights Sugar Fears' (*foodmanufacture.co.uk*, 1 August 2018) <<https://www.foodmanufacture.co.uk/Article/2018/08/01/Consumer-concern-about-sugar-content-in-food-increases>> accessed 3 February 2021.

<sup>270</sup> O. Anabtawi and others, 'Perceived Healthiness of Food Items and the Traffic Light Front of Pack Nutrition Labelling: Choice-Based Conjoint Analysis and Cross-Sectional Survey' (2020) 33 *J Hum Nutr Diet* 487, 491.

<sup>271</sup> Beatriz Franco-Arellano and others (n 259) 8.

induced by such claims<sup>272 273 274 275</sup>. Another study, however, found great potential for Nutrition Claims to mislead consumers and undermine the efficiency of the Nutri-Score<sup>276</sup>.

When focusing on Nutrition Tables and their relationship to FOPNL, researcher found a little evidence for misleading potential and concluded that most consumers use the FOPNL to evaluate the nutritional quality<sup>277</sup>. This aligns in principle with the findings in this study, however, based on the data produced no such potential can be excluded.

No study is known to assess consumer perception of Ingredient Lists and the Nutri-Score. However, in this study the Ingredient List emerged as a critical factor, as people tended to use a short ingredient list as a proxy for healthiness. This findings becomes even more interesting when taking into account that most participants stated to actively search for the Ingredient List in real purchasing environments.

Based on the scope of the project the findings of this experiment have several limitations. First of all, the sample size was considerably small and not representative. Therefore the findings cannot be generalised to a broader European public. Moreover, the questionnaires only displayed one additional kind of information, not all that could normally be found on food packages and only one food group was tested. The participants were confronted with the additional information on or next to the package, whereas in real life those information would partly be found on the back of the pack and therefore consumer would have to actively look for them. Another important factor to consider is that other elements such as packaging design could have influenced consumer perception. Furthermore, healthiness and other terms like nutritional quality used in this setting have no strict definition and are open to some extent of individual interpretation<sup>278</sup>. Thus, it cannot be proven that participants had the desired concept in mind when they evaluated the products.

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<sup>272</sup> Ninya Maubach, Janet Hoek, and Damien Mather (n 260) 75.

<sup>273</sup> Rachael McLean, Janet Hoek, and Duncan Hedderly (n 261) 790.

<sup>274</sup> Zenobia Talati and others, 'The Combined Effect of Front-of-Pack Nutrition Labels and Health Claims on Consumers' Evaluation of Food Products' (n 262) 63.

<sup>275</sup> Zenobia Talati and others, 'Consumers' Responses to Health Claims in the Context of Other on-Pack Nutrition Information: A Systematic Review' (2017) 75 Nutr. Rev. 260, 271.

<sup>276</sup> Cayetano Medina-Molina and Benito Pérez-González (n 263) 765.

<sup>277</sup> Beatriz Franco-Arellano and others (n 259) 8.

<sup>278</sup> Javier Liñán, Pilar Arroyo, and Lorena Carrete, 'Conceptualizing Healthy Food: How Consumer's Values Influence the Perceived Healthiness of a Food Product' (2019) 7 J. Food Nutr. Res. 679, 684.

#### 4.2.1.3 Preliminary Findings

This experiment was conducted to gather further information about the contribution to fulfilment of the objective the Nutri-Score might be able to achieve, especially if assessed in the regulatory environment of other mandatory or voluntary nutrition-related information on food packages. In this study no per se negative influence in an undesired direction by the additional information provided was observed, even though short Ingredient Lists seem to have an influence on the healthiness perception. Moreover, especially in the intermediary range potential for unwanted interaction might still exist.

Applying these findings to the legal assessment under Art. 2.2 TBTA, the already existing labelling legislation does not categorically exclude the possibility that the Nutri-Score is capable of facilitating consumers' healthier food choices.

Combining this information with the results of the literature review, it can be concluded that there are no clear empirical evidences regarding the real-life effectiveness of the Nutri-Score to help to achieve the goal. While convincing evidence for such a potential exists, other studies come to opposite conclusions.

Yet, as stated above the contribution to fulfilment is not the only factor to evaluate during the Necessity Test, but rather a part of it. Keeping these preliminary findings in mind, the paper continues with assessing the other criteria *Trade-Restrictiveness* and *Risks and Gravity of non-fulfilment*.

#### 4.2.2 Trade-Restrictiveness

The establishment of trade-restrictiveness is of fundamental importance for the subsequent analysis, since this feature of a measure is weighed and balanced with its contribution to the legitimate objective, the risk of non-fulfilment and to assess whether any less trade-restrictive measure is reasonably available<sup>279</sup>. If the influence on trade is not *de jure* obvious, a sufficient demonstration why and how the measure will affect international trade is required<sup>280</sup>. However, similar to the concept of contribution to fulfilment, trade-restrictiveness is a matter of degree<sup>281</sup> and a quantification might not always be possible, e.g. because the measure has not been in place

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<sup>279</sup> Tania Vonn, 'Exploring the Meaning of Trade-Restrictiveness in the WTO' (2015) 14 World Trade Rev. 451, 459.

<sup>280</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1075.

<sup>281</sup> Tania Vonn (n 279) 467.

yet <sup>282</sup>. Moreover, trade-restrictiveness is not solely defined by absolute numbers of im- or exports before and after a measure had been put in place <sup>283</sup> and also the establishment of discriminatory practices might not necessarily mean that the measure is trade-restrictive as well <sup>284</sup>. Rather, one has to assess the overall limiting effect on international trade when examining trade-restrictiveness <sup>285</sup>, but not all products from all WTO Members have to be taken into account <sup>286</sup>. Notwithstanding a particular method to establish trade-restrictiveness has not been developed in the WTO jurisdiction yet and that the assessment of trade-restrictiveness may vary from case to case and depends on the special circumstances <sup>287 288</sup>, a prime example of how to conduct such an analysis was given in the *Australia – Tobacco Plain Packages* dispute (hereinafter AUS-TPP) by the Panel. Here, three main groups of arguments were considered <sup>289</sup>:

- A) Effects of the measure on the competitive environment,*
- B) Effect on the level and volume of traded goods in question,*
- C) Compliance costs*

Those criteria are further explained and applied to the Nutri-Score in the following section.

#### *A) Effects of the measure on the competitive environment*

Regarding criterion a) the Panel made clear the mere alteration of the competitive environment is not enough to establish trade-restrictiveness, if it applies to all competing products in the market <sup>290</sup>. Moreover, the Panel assessed whether the measure hinders market entrance for particular products or importing countries <sup>291</sup>.

Undisputable, the Nutri-Score alters the competitive environment, because it forces producers to highlight particular information about their products which might not be promotional, especially not for unhealthy food and thereby result in competitive disadvantages. But it does so for all products regardless their origin and applies to all products in the market. Therefore, it cannot be viewed as trade-restrictive in this regard.

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<sup>282</sup> *Panel Report Australia – Tobacco Plain Packaging* (n 168) at para. 7.1076.

<sup>283</sup> Tania Vonn (n 279) 468.

<sup>284</sup> *Panel Report Australia – Tobacco Plain Packaging* (n 168) at para. 7.1074.

<sup>285</sup> *ibid* at para. 7.1072.

<sup>286</sup> *ibid* at para. 7.1078.

<sup>287</sup> *ibid* at para. 7.1074.

<sup>288</sup> Gabrielle Marceau (n 169) 11.

<sup>289</sup> *Panel Report Australia – Tobacco Plain Packaging* (n 168) at para. 7.1161.

<sup>290</sup> *ibid* at para. 7.1166.

<sup>291</sup> *ibid* at para. 7.1178.

Notwithstanding this argument concerning the label itself, a current hurdle that might affect foreign market actors more than domestic ones and therefore could impede market entrance is the mandatory registration of the Nutri-Score prior use, resulting from its protection as a trademark under Intellectual Property Rights <sup>292</sup>. Although no direct fee is involved <sup>293</sup>, this bureaucratic act might be especially challenging for small companies abroad, lacking the necessary knowledge, language requirements and/or personnel to complete such registrations.

#### *B) Effect on the level and volume of traded goods in question*

Secondly, the examination focused on the effects of trade volumes. Here, the Panel found that the very key objective of the measure was to reduce the consumption and subsequently the demand of and trade in tobacco products <sup>294</sup>. Therefore, the trade-restrictiveness under this aspect was established <sup>295</sup>.

The objective of the Nutri-Score is comparable to the one of the TPP measures introduced by Australia. In the case at hand the public shall be encouraged to eat less unhealthy foodstuff and improve their diets. In both cases, the aim of the measures is the reduction in consumption of particular goods. Inevitable, if this desired reduction in consumption is achieved, it leads to diminishing demand and therefore decreasing volume in trade for unhealthy products with an inferior Nutri-Score ranking. Similar to the argumentation presented by the Panel in the AUS – TPP case, the Nutri-Score can be considered limiting international trade because it aims at lowering the demand for particular products, in this case unhealthy foodstuff <sup>296</sup>.

#### *C) Compliance costs*

Thirdly, the compliance costs were evaluated. The Panel reiterated findings from US-COOL and US-Tuna II disputes and stated that technical regulations are not per se trade-restrictive, even if they are mandatory <sup>297</sup>. Additionally, it was clarified that compliance costs and penalties might have indeed trade-restrictive effects <sup>298</sup> but also that this has to be assessed on a case-by-case basis and the mere existence of any costs for initial compliance or penalties does not suffice to show trade-

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<sup>292</sup> Santé Publique France, 'Conditions of Use of the Nutri-Score Logo' 4.

<sup>293</sup> *ibid* 7.

<sup>294</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1204.

<sup>295</sup> *ibid* at para. 7.1208.

<sup>296</sup> *ibid*.

<sup>297</sup> *ibid* at para. 7.1226.

<sup>298</sup> *ibid* at para. 7.1242.



restrictiveness<sup>299</sup>. In this particular case, the Panel found the compliance costs induced by the measure not of such gravity as to be considered trade-restrictive<sup>300</sup>.

Incontrovertibly, producers and importers would encounter initial costs due to relabelling. But, as the Panel stated, compliance costs are not trade-restrictive in themselves. The question is rather if they are of such an extent as to discourage trade. Following a model developed by French et al., the subsequent cost types have to be taken into account when it comes to label changes: administrative, analytical, marketing, printing and inventory costs<sup>301</sup>. A precise quantification of all the levels of these costs would hinge on many influential assumptions and is therefore nearly impossible to compute beforehand for all market actors<sup>302</sup>.

Nevertheless, most information required for calculating the Nutri-Score is already mandatory for other labelling elements like the Nutrition Table or the Ingredient List. Firms therefore would face little to no additional analytical costs.

Regarding printing and inventory costs, a prudent determination of the length of the compliance period can decrease those costs significantly<sup>303</sup>, since labels have to be updated occasionally regardless changed legal requirements<sup>304</sup>.

Therefore, it can be said that there is no reason to believe these initial compliance costs are of such an extent as to have a limiting effect on international trade, especially if considered that all market actors, domestic as well as foreign, face the same additional expenditures.

Following, it is required to establish whether associated fines can be considered trade-restrictive. Penalties applied to the infringements of the Nutri-Score can be based on various legal grounds. First, they could result from violation of the FIR or other related labelling regulations. In these cases, the European Member States are responsible for determining the fines<sup>305</sup>. Even though this has not happened yet, there is no evidence they would constitute undue burdens and hinder trade, since this has not been the case for all other already existing labelling requirements and fines linked to their breach.

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<sup>299</sup> *ibid* at para. 7.1235.

<sup>300</sup> *ibid* at para. 7.1255.

<sup>301</sup> Michael T. French and others, 'A Model for Estimating Industry Compliance Costs of Food Labeling Regulations' (1992) 8 *Agribusiness* 165, 6.

<sup>302</sup> *ibid*.

<sup>303</sup> *ibid*.

<sup>304</sup> *ibid* 12.

<sup>305</sup> Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety Art. 17 Nr. 2.

Additionally, companies could face penalties due to trademark infringements and be sued under Unfair Competition Law <sup>306 307</sup>. This is especially relevant if the operator's calculation of the Nutri-Score does not comply with the rules or if the Nutri-Score doesn't match with the reality of the nutritional properties of the product altogether <sup>308</sup>. Also the failure to register the use of the logo infringes the property rights of Santé Publique France and might lead to fines <sup>309</sup>.

Another problem could be civil contractual consequences resulting from the registration for the use of the trademark and incorrect application of it <sup>310</sup>.

Damages for trademark infringements are stipulated in national law <sup>311</sup>. In France, monetary remedies against the infringer depend on the negative economic consequences, lost profits of the proprietor, and unfair profits gained by the infringer <sup>312</sup>. Clearly, the costs associated with litigation and fines under Trademark Law, Unfair Competition Law or civil suits cannot be estimated beforehand but can be severe <sup>313</sup>.

Therefore and considered those circumstances, it is deemed that the penalties and linked expenditures can indeed induce a trade-restrictive effect and discourage foreign companies from entering the market.

#### 4.2.3 Risk and Gravity of Non-fulfilment

The assessment of the risk and gravity non-fulfilment would create is part three of the relational analysis <sup>314 315</sup>. Logically, the risks of non-fulfilment are closely related to the objective of the measure at hand <sup>316</sup>. A specific method to examine such risks has not been established so far but the

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<sup>306</sup> Santé Publique France (n 292) 16.

<sup>307</sup> Rödl & Partner, 'Nutri-Score: The Colour Guide for Informed Food Choices Faces...' (*Insights*, 11 November 2020) <<https://www.roedl.com/insights/life-science-recht/nutri-score-eu-trademark-law-lmidv-competition>> accessed 7 February 2021.

<sup>308</sup> Santé Publique France (n 292) 16.

<sup>309</sup> Rödl & Partner (n 307).

<sup>310</sup> *ibid.*

<sup>311</sup> Michael Hawkins and Tobias Folde, 'Trademark Enforcement in the European Union | Lexology' (10 April 2019) <<https://www.lexology.com/library/detail.aspx?g=7fd8d410-c2ce-4276-90e7-15d7ab75b008>> accessed 7 February 2021.

<sup>312</sup> Eléonore Gasper, 'Trade Mark Litigation in France: Overview' (*Practical Law*) <[http://uk.practicallaw.thomsonreuters.com/w-011-1849?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](http://uk.practicallaw.thomsonreuters.com/w-011-1849?transitionType=Default&contextData=(sc.Default)&firstPage=true)> accessed 7 February 2021.

<sup>313</sup> *ibid.*

<sup>314</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 322.

<sup>315</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1256.

<sup>316</sup> *ibid* at para. 7.1260.

wording of Art. 2.2 TBTA provides some information which aspects should be considered, which is, inter alia, scientific evidence <sup>317 318</sup>.

A remarkable distinction was made in the AUS-TPP case between likelihood and nature of risk. According to the panel in that dispute, the analysis of risks should focus on the identification of specific risks <sup>319</sup>. Moreover, it was emphasized that this test should not assess whether the measure at issue is capable to fulfil the objective but rather what happens if the objective is not fulfilled, regardless the chosen measure <sup>320</sup>. Therefore, so the Panel argued, does this test not entail an assessment whether the measure is likely to fulfil its goal or not, also not in comparison with proposed alternative measures <sup>321</sup>.

As stated above, the justified hypothesis in this paper is that the prime goal of the Nutri-Score is to “*facilitate consumers’ healthier food choices*”. Therefore, the consequence of non-fulfilment would be no improvement in food choices, which brings about a public health problem resulting from a stable level or an even increasing incidence of diet-related medical conditions. Various studies have shown the link between poor dietary choices, and a higher risk for developing severe health conditions like cancer <sup>322 323</sup>, cardiovascular diseases <sup>324</sup>, and weight gain <sup>325</sup>. In the light of these findings, it can be assumed that the public health consequences resulting from no improvement of dietary habits are remarkably grave.

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<sup>317</sup> *ibid* at para. 7.1283.

<sup>318</sup> TBTA Art. 2.2.

<sup>319</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1291.

<sup>320</sup> *ibid* at para. 7.1292.

<sup>321</sup> *ibid* at para. 7.1293.

<sup>322</sup> Mathilde Donnenfeld and others, ‘Prospective Association between Cancer Risk and an Individual Dietary Index Based on the British Food Standards Agency Nutrient Profiling System’ (2015) 114 Br. J. Nutr. 1702, 1705.

<sup>323</sup> Mélanie Deschasaux and others, ‘Nutritional Quality of Food as Represented by the FSAm-NPS Nutrient Profiling System Underlying the Nutri-Score Label and Cancer Risk in Europe: Results from the EPIC Prospective Cohort Study’ (2018) 15 PLoS Med, 11.

<sup>324</sup> Solia Adriouch and others, ‘Prospective Association between a Dietary Quality Index Based on a Nutrient Profiling System and Cardiovascular Disease Risk’ (2016) 23 Eur. J. Prev. Cardiol. 1669, 1672.

<sup>325</sup> Chantal Julia and others, ‘Prospective Associations between a Dietary Index Based on the British Food Standard Agency Nutrient Profiling System and 13-Year Weight Gain in the SU.VI.MAX Cohort’ (2015) 81 Prev. Med. 189, 191.

### 4.3 Comparative Analysis

The second part of the Necessity Test constitutes a comparative evaluation based on the outcomes of the relational analysis to examine whether other, less trade-restrictive measures are reasonably available<sup>326 327 328</sup>.

Aside from the less significant influence on trade, the equivalent contribution to the legitimate objective has to be established<sup>329 330 331</sup>, since a Member is allowed to choose the level of protection it wants to pursue<sup>332 333</sup>.

Thus, in order to challenge a measure, a less trade-restrictive method, which makes an equivalent contribution to the objective and is reasonably available has to be identified<sup>334</sup>. The term reasonably available is crucial in this regard. The existence of substantial technical difficulties or prohibitive costs constitute undue burdens and render a measure unavailable<sup>335</sup>. However, when considering costs, the magnitude has to be taken into account, as the mere existence of costs or a slight increase compared to those of the original measure do not necessarily constitute an undue burden<sup>336</sup>.

In order to be considered equivalent, a proposed alternative has to achieve the same degree of contribution to the fulfilment of the goal as the challenged measure<sup>337 338</sup>. However, equivalent in this context does not mean identical and seems to be a margin of appreciation, especially if taken the risks of non-fulfilment into account<sup>339</sup>. Whether this comparison is of quantitative or qualitative nature depends on the data available and limits to the degree of precision are inevitable<sup>340</sup>. Nevertheless, even though the degree of feasibility of a comparison might vary, an assessment has to be conducted as best as possible<sup>341</sup>.

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<sup>326</sup> Alejandro Sanchez and Karyn Sandra Aneno (n 181) 370.

<sup>327</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 322.

<sup>328</sup> *ibid* at para. 320.

<sup>329</sup> *ibid* at para. 321.

<sup>330</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1366.

<sup>331</sup> Meredith Crowley and Robert Howse, 'Tuna-Dolphin II: A Legal and Economic Analysis of the Appellate Body Report' (2014) 13 *World Trade Rev.* 321, 9.

<sup>332</sup> *Appellate Body Report US - COOL (Article 21.5 - Canada and Mexico)* (n 208) at para. 5.214.

<sup>333</sup> Lukasz Gruszczynski, 'THE TBT AGREEMENT AND TOBACCO CONTROL REGULATIONS' (2013) 8 *Asian J WTO and Int'l Health L and Pol'y* 115, 129.

<sup>334</sup> *Appellate Body Report US - COOL (Article 21.5 - Canada and Mexico)* (n 208) at para. 5.213.

<sup>335</sup> *ibid* at para. 5.330.

<sup>336</sup> *ibid*.

<sup>337</sup> *ibid* at para. 5.253.

<sup>338</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1366.

<sup>339</sup> *Appellate Body Report US - COOL (Article 21.5 - Canada and Mexico)* (n 208) at para. 5.254.

<sup>340</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.136.

<sup>341</sup> *ibid* at para. 7.1367.

When considering alternatives to the Nutri-Score that contribute to facilitating consumers' healthier food choices, Brambila-Macias et al,<sup>342</sup>, referring to Mazzocchi et al.<sup>343</sup> identified the following policy fields as capable to affect healthy eating:

- *"Policies aiming at changing the market environment"*
  - *Fiscal measures*
  - *Regulation of meals in canteens and schools*
  - *Nutrition-related standards*
- *Policies aiming at supporting more informed choices*
  - *Advertising controls*
  - *Public information campaigns*
  - *Nutrition education*
  - *Nutrition labelling*
  - *Nutrition information on menus"*<sup>344</sup>

Highly potent measures of the first category that change the market environment such as bans, quotas, production standards or taxes, would all probably be more efficient in contributing to the goal than labelling<sup>345 346</sup>. However, from a trade-perspective these alternatives are obviously more undesirable than an additional mandatory labelling particular and can therefore be discarded.

One considerable alternative is an information and education campaign to improve food literacy. Even though undisputable costs result from such campaigns, those seem not to be prohibitive a priori, therefore the same contribution to the fulfilment has to be established. Various reviews and studies in this regard could not proof an unequivocal connection between more knowledge in form of education and improved food choices, even though findings point toward it<sup>347 348 349 350</sup>. Thus, it

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<sup>342</sup> Jose Brambila-Macias and others, 'Policy Interventions to Promote Healthy Eating: A Review of What Works, What Does Not, and What Is Promising' (2011) 32 Food Nutr Bull 365, 366.

<sup>343</sup> M Mazzocchi, WB Traill, and JF Shogren, *Fat Economics: Nutrition, Health and Economic Policy* (Oxford University Press 2009).

<sup>344</sup> Jose Brambila-Macias and others (n 342) 366.

<sup>345</sup> Elise Golan, Fred Kuchler, and Lorraine Mitchell, 'Economics of Food Labelling' (US Department of Agriculture 2000) AER-793 15.

<sup>346</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1543.

<sup>347</sup> Jose Brambila-Macias and others (n 342) 373.

<sup>348</sup> Christopher J Bailey, Murray J Drummond, and Paul R Ward, 'Food Literacy Programmes in Secondary Schools: A Systematic Literature Review and Narrative Synthesis of Quantitative and Qualitative Evidence' (2019) 22 Public Health Nutr 2891, 2909.

<sup>349</sup> Inge Spronk and others, 'Relationship between Nutrition Knowledge and Dietary Intake' (2014) 111 Br. J. Nutr. 1713, 1722.

<sup>350</sup> Rimante Vaitkeviciute, Lauren E. Ball, and Neil Harris, 'The Relationship between Food Literacy and Dietary Intake in Adolescents: A Systematic Review' (2014) 18 Public Health Nutr. 649, 655.

cannot be proven at this point that isolated information and education campaigns can significantly impact the eating behaviour on a large scale.

Even though not mentioned above, another policy field to influence consumer behaviour is the altering of the choice environment <sup>351</sup>, like proximity or placement nudges <sup>352</sup>. These measures seem to be reasonably available, since there is no reason to believe that the costs would be a priori prohibitive or that an implementation would lead to extensive technical difficulties <sup>353</sup>. However, the data available for efficacy of nudging methods other than labelling, even though sometimes promising, is inconclusive and insufficient <sup>354 355 356</sup>.

As described above, those options have to be compared to the Nutri-Score against the background whether they are equally effective but less trade-restrictive. Since the risks of non-fulfilment are considerably severe, the margin for appreciation regarding the equivalence of contribution seems small.

One characteristic all those measures share is the uncertainty regarding the real-life contribution to the objective. Therefore, it cannot be proven that they would be equally effective.

Regarding trade-restrictiveness, however, the measures presented above possess the undisputable advantage of not being related to Intellectual Property Rights. Therefore, they do not hinder market entrance nor are they associated with deterring fines in the way the Nutri-Score as a registered trademark is. In this regard, they are less trade-restrictive.

Anyhow, it has to be taken into account that the trade-restrictiveness of the initial measure does not result from the Nutri-Score as a labelling particular itself but rather from its status as a trademark, which could be changed in the future if the EC prescribes a mandatory application.

The unalterable trade-restrictiveness, however, stems from the intended goal, as to reduce the consumption of unhealthy food products. By virtue, every measure contributing to that goal to the same degree would be as trade-restrictive <sup>357</sup>.

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<sup>351</sup> Riccardo Vecchio and Carla Cavallo, 'Increasing Healthy Food Choices through Nudges: A Systematic Review' (2019) 78 Food Qual. Prefer., 1.

<sup>352</sup> Christine Tørris and Hilde Mobekk, 'Improving Cardiovascular Health through Nudging Healthier Food Choices: A Systematic Review' (2019) 11 Nutrients 2520, 14.

<sup>353</sup> *ibid* 15.

<sup>354</sup> Anneliese Arno and Steve Thomas, 'The Efficacy of Nudge Theory Strategies in Influencing Adult Dietary Behaviour: A Systematic Review and Meta-Analysis' (2016) 16 BMC Public Health 676, 9.

<sup>355</sup> Riccardo Vecchio and Carla Cavallo (n 351) 9.

<sup>356</sup> Marjolein C Harbers and others, 'The Effect of Nudges on Purchases, Food Choice, and Energy Intake or Content of Purchases in Real-Life Food Purchasing Environments: A Systematic Review and Evidence Synthesis' (2020) 19 Nutr. J. 103, 22.

<sup>357</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1621.

Moreover, the DSB rarely found less trade-restrictive measures than labelling for the GATT <sup>358</sup> and also in recent TBTA disputes a less trade-restrictive measure than labelling could not be established <sup>359 360</sup>.

Based on these considerations, education campaigns and non-labelling nudges would be less trade-restrictive, hinging on the connection of the Nutri-Score to Intellectual Property Law, but an equal effect cannot be established beyond doubt.

## 5. Weighing and Balancing

In order to finally evaluate the compliance of the Nutri-Score with the criteria laid down in Art. 2.2 TBTA, taking into account the findings from the empirical study regarding the influence of other nutrition-related labelling elements, a variant of a weighing and balancing act has to be conducted, including all factors and findings discussed in Chapter 4 <sup>361 362 363 364</sup>.

To do so, a brief recap of the findings:

### *Legitimate objective*

As explained, the reasonable assumption is that the policy objective of the mandatory implementation of a FOPNL, potentially in form of the Nutri-Score, in the EU is the facilitation of consumers' healthier food choices. This objective can be deemed legitimate in the meaning of Art. 2.2 TBTA, since it broadly relates to the protection of human health and is neither unjustifiable nor arbitrary.

### *Degree of contribution*

Based on the limited empirical evidences for the real-life influences of the Nutri-Score on actual purchase and consumption behaviour in realistic settings and over a long time, the degree of contribution appears to be a bottleneck and is not quantifiable.

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<sup>358</sup> John J. Emslie, 'Labeling Programs as a Reasonably Available Least Restrictive Trade Measure under Article XX's Nexus Requirement' (2005) 30 BROOK. J. INT'L L. 485, 537.

<sup>359</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 331.

<sup>360</sup> *Appellate Body Report US - COOL* (n 170) at para. 491.

<sup>361</sup> Lukasz Gruszczynski (n 333) 128–129.

<sup>362</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at para. 321.

<sup>363</sup> Sui Jun, 'From Balance to Unbalance: The Necessity Test under the TBT Agreement' (2013) 3 *Jour. of WTO and China* 3, 14.

<sup>364</sup> Csongor István Nagy, 'Clash of Trade and National Public Interest in WTO Law: The Illusion of "Weighing and Balancing" and the Theory of Reservation' (2020) 23 *J. Int. Econ. Law* 143, 155.

Since a measure does not have to fulfil a threshold for contribution but rather has to contribute to some unspecific extent, this lack of numerical predictability does not render the Nutri-Score inconsistent. As already addressed in the AUS-TPP dispute, the driver for behaviours are complex and convoluted, wherefore not everyone will react to a measure and alter their behaviour to the same magnitude in the desired direction <sup>365</sup>. The Panel also acknowledged the fact of the empirical difficulties to quantify influences on behaviour <sup>366</sup>.

Even though scientific uncertainty about the efficiency remains and potential flaws of the Nutri-Score such as misinterpretation or information overload are not sufficiently researched to make an exhaustive conclusion, by means of the available data it is not per se *excluded* that the Nutri-Score might have a positive influence on consumers' food choices. The study conducted in this thesis also indicates that the regulatory context in form of other nutrition-related labelling legislation does not categorically preclude positive effects.

Summarising the evidence, the Nutri-Score seems at least capable of making some contribution to the objective, which suffices to pass this criterium of the Necessity Test as seen in the disputes US-COOL <sup>367</sup>, AUS-TPP <sup>368</sup> and US – Tuna II <sup>369</sup>.

#### *Trade-Restrictiveness*

The Nutri-Score is inherently trade-restrictive based on the objective to decrease the consumption of and therefore subsequently trade in unhealthy food products.

Additional to this unchangeable characteristic, the Nutri-Score as a trademark hinders market entrance for foreign companies by requiring registration prior use, which can constitute a significant hurdle for small companies abroad. Furthermore, high penalties associated with infringements of Intellectual Property Rights, Unfair Competition Law and related civil suits by the trademark proprietor can act as considerable deterrents for some companies to enter the market. Thus, the Nutri-Score as a labelling element in itself entails a comparable low trade-restrictiveness, however, its status as a trademark creates trade impediments to a notable extent for some market actors.

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<sup>365</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at paras. 7.1031-7.1032.

<sup>366</sup> *ibid* at para. 7.1040.

<sup>367</sup> *Appellate Body Report US - COOL* (n 170) at paras. 466-468.

<sup>368</sup> *Panel Report Australia - Tobacco Plain Packaging* (n 168) at para. 7.1043.

<sup>369</sup> *Appellate Body Report US - Tuna (II) Mexico* (n 71) at paras. 327 & 333.



### *Risk & Gravity of non-fulfilment*

The risk of non-fulfilment is no improvement in dietary choices and a thereof resulting stagnating or even increasing incidence in diet-related diseases, which can be considered severe since it threatens individual as well as public health.

### *Reasonably available alternatives*

As less trade-restraining and reasonably available alternatives education campaigns and non-labelling nudges were discussed. Those are less trade-restrictive in the regard as they are not associated with Intellectual Property Rights, however, the inherent trade-restrictiveness resulting from the objective of the measure still remains. Due to lack of empirical data an equal contribution cannot be established.

### *Evaluation*

During the weighing and balancing test the trade-restrictiveness of the measure has to be evaluated against its contribution to the fulfilment of the goal <sup>370</sup>.

The protection of the Nutri-Score as a trademark contributes to the fulfilment of the objective to facilitate consumers' healthier food choices in the regard as it prevents market actors from using similar schemes based on other dietary indexes or calculations and thereof resulting consumer confusion and mistrust <sup>371</sup>, although the detrimental impact on market entrance opportunities for foreign companies can be significant and adds to the inevitable trade-restrictiveness linked to the objective of the measure.

Considering the low level of established contribution to the objective, any additional trade-restrictiveness could be the Achille's heel and lead to inconsistency of the measure with Art. 2.2 TBTA. Whether or not the trademark protection of the Nutri-Score is justifiable and not unnecessarily encumbering is beyond the scope of this thesis, as it requires are more detailed analysis of the TRIPS Agreement, Art. 20 in particular.

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<sup>370</sup> *ibid* 321.

<sup>371</sup> Santé Publique France (n 46) 12.

If only focused on the Nutri-Score as a labelling particular itself and disregarding the trademark protection, the findings suggest the Nutri-Score as a variant of a FOPNL, if introduced in order to facilitate healthier consumers' food choices in the European Union to be not more trade restrictive than necessary, taken risks of non-fulfilment into account and thereby likely pass the Necessity Test stipulated in Art. 2.2 TBTA.

This statement is still valid if the broader regulatory environment in form of other nutrition-related labelling requirements is taken into account. Other labelling elements such as Nutrition Tables, Nutrition Claims and Ingredient Lists do not seem to diminish the efficiency of the Nutri-Score to a great extent, although some potential for misinterpretation and interferences exists, especially in the intermediary range of attributes related to perceived healthiness.

However, a final conclusion can only be stated when the trademark protection is found essential and compliant with the TRIPS Agreement. A breach of this would probably subsequently result in excessive and unnecessary trade-restrictiveness under Art. 2.2 TBTA, since those two analyses seem to be intertwined to some extent <sup>372</sup>.

## 6. Conclusion

Due to the apparent drawbacks of currently prevailing numerical Back-Of-Pack nutrition labels and the still increasing incidence of overweight and associated health conditions the EC decided to announce the mandatory introduction of an uniform FOPNL. A favourite among many stakeholders is the grading scheme Nutri-Score, which is based on the British FSA-NPS index and categorizes food into five groups, while taking presumably healthy and unhealthy nutrients into account. Many European countries already have the option for companies to display this logo voluntarily, thus it can be assumed this variety of FOPNL will receive special attention from the European legislator while discussing the details of the new labelling particular. As a member of the WTO, the EU is obliged to comply with all requirements of this jurisdiction, otherwise it might face disputes and trade sanctions imposed by other Member States if non-compliance is detected and unremedied.

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<sup>372</sup> Kristy Buzard and Tania Vonn, 'How Trade-Restrictive Is Standardized Packaging? Economic and Legal Implications of the WTO Panel Reports in Australia–Tobacco Plain Packaging' (2020) 19 *World Trade Rev.* 267, 279–280. Admittedly, the example given works the other way around, as the Panel in AUS-TPP significantly relied upon its findings under Art. 2.2 TBTA to evaluate compliance with Art. 20 TRIPS. However, a connection between those two inquiries seems to exist.

This thesis aimed at evaluating the compliance of the Nutri-Score with Art. 2.2 TBTA, especially if focused on the interplay of different mandatory or voluntary nutrition-related labelling elements.

In order to do so, it was first determined that WTO law is applicable in general, since foodstuff crosses borders and labelling requirements constitute barriers to trade. Moreover, it was analysed that the TBTA is the applicable Agreement rather than the SPSA, since the label does not convey information about Food Safety in the first place.

Afterward, it was demonstrated that the measure would probably constitute a technical regulation and not a standard under the TBTA, since it applies to an identifiable group of products, lays down product characteristics and, most importantly, can be seen as *de facto* compulsory regardless its *de jure* status. This implies a higher level of attention paid by other WTO Member States, because technical regulations are often seen as more jeopardizing to free trade than standards and the EU will probably have to face more scrutiny in explaining and justifying the measure.

When focusing on the Necessity Test embedded in Art. 2.2 TBTA, the analysis found the measure pursues to facilitate consumers' healthier food choices, which can be seen as legitimate within the meaning of the TBTA, as it is neither discriminatory nor arbitrary.

The possible contribution to the fulfilment of the goal was assessed via literature review. Many studies examining FOPNL in general and the Nutri-Score in particular exist, however, they do not deliver a clear picture regarding the real life effectiveness of this scheme to alter food choices. Some studies deliver very promising results, while other point in the opposite direction.

Especially the interplay between the Nutri-Score and other nutrition-related labelling elements that might influence the efficacy of the first has not been studied. Therefore, within the course of this thesis online questionnaires were developed to give a first impression about possible conflicting messages and consumers' reaction to it. The findings show a great capability of consumers to clearly identify the healthiest and least-healthiest version of products, but in the intermediate range some potential for misinterpretation exists. Therefore, the regulatory environment the Nutri-Score would operate in does not per se exclude its efficiency.

Even though these empirical evidences are vague, the case law in TBTA disputes has shown some margin regarding the interpretation of contribution to fulfilment. In most cases, a theoretical contribution to some extent sufficed to comply with this requirement, wherefore the Nutri-Score is also deemed compliant with this criterium, although admittedly scientific uncertainty remains.

Scrutinizing further aspects of the Necessity Test, the analysis found trade-restrictiveness to be intimately linked to the objective. A more significant aspect influencing trade opportunities, however, is the status of the Nutri-Score as a trademark. Prior registration requirements and possible high penalties linked to infringements can constitute significant obstacles and deterrents for market entrance for foreign companies.

The risk of non-fulfilment entails a public health problem and is therefore considered of severe gravity.

As reasonably available alternatives education campaigns and non-labelling related nudges were discussed. Their advantage is the smaller impact on market entrance opportunities, however, the trade-restrictiveness resulting from the link to the objective still exists. However, the empirical data supporting their efficiency are even more rare than for the Nutri-Score, wherefore no less trade-restrictive measure contributing equally to the objective could be identified.

Therefore and while acknowledging the lack of unequivocal and quantifiable empirical evidence for the contribution to the fulfilment of the objective, the thesis comes to the preliminary conclusion that the introduction of the Nutri-Score in the European Union would likely be in compliance with Art. 2.2 TBTA, even if the interplay between different labelling elements and their influence on consumer perception is considered.

Notably, this interpretation assumes compliance of the trademark protection with the TRIPS Agreement.

Based on the findings several recommendations are developed:

Firstly, the need for more realistic and long-term studies regarding the influence of the Nutri-Score on real life purchasing and consumption behaviour is undisputable, especially if the measure has to be justified against accusations of being more trade-restrictive than necessary. By increasing the amount and quality of empirical data supporting the effectiveness of the measure, the legislator can drastically decrease the risk that the measure is found inconsistent with Art. 2.2 TBTA.

Secondly, a strong recommendation especially in the light of the vague data regarding the contribution to fulfilment is to look into the registration requirements of the Nutri-Score as a trademark and to attempt to decrease the trade-restrictiveness of the measure by amending and simplifying this process.

Thirdly, the empirical study has shown that some interplay between labelling elements exist and might lead to misinterpretations by consumers. Therefore, the legislator should ensure all labelling initiatives supporting the objective to facilitate healthier food choices and leaving little leeway for

the industry to use conflicting messages on food packages, undermining the efficiency of the Nutri-Score. A good approach into this direction is the already announced link between the use of Nutrition and Health Claims to nutrient profiles <sup>373</sup>. This thesis supports the importance of such uniform legislative actions.

Fourthly, it is advised to accompany the implementation of the new FOPNL, being it the Nutri-Score or another version, with an European-wide information campaign to explain the label to the consumers and raise awareness. The empirical study has shown that while the majority of people self-reportedly know the Nutri-Score, some still do not. Moreover, such a campaign would increase the attention paid to the label. As the questionnaire *Nutri-Score & Nutrition Tables* has shown, participants significantly did not recognize the label because they were focused on other information. Hence, a media campaign introducing the Nutri-Score to the consumer could diminish the risk of such insensitivity in real life.

Lastly, an examination of other requirements stipulated in the WTO jurisdiction is crucial to avoid discussions and disputes in the committees and Dispute Settlement System. Especially relevant in this regard are Art. 2.1 and 2.4 TBTA and the TRIPS Agreement, aside from general GATT requirements.

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<sup>373</sup> European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System' (n 14) 12.

## Annex

### I) Questionnaires

#### Survey Flow

<b>Block: Intro (1 Question)</b>
<b>BlockRandomizer: 1 - Evenly Present Elements</b>
<b>Group: Nutrition Tables</b>
Block: Nutrition eval (5 Questions) Block: Nutrition Associations (5 Questions)
<b>Group: Nutrition Claims</b>
Block: Claims eval (5 Questions) Block: Claims associations (5 Questions)
<b>Group: Ingredient Lists</b>
Block: ingredients eval (5 Questions) Block: ingredients Associations (5 Questions)
<b>Standard: Personal questions block (9 Questions)</b>

Page Break

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#### Start of Block: Intro

Q43 Dear consumer,

You are invited to participate in research investigating healthiness perception of four different breakfast products. This research is being conducted by Wageningen University and Research. It will take you approx. 5-7 minutes to complete.

**Confidentiality of the research data** The data we collect during this study will be used by scientists for articles and presentations. Of course, these data will be made fully anonymous and safely stored under the guidelines of General Data Protection Regulation (GDPR) law.

**Voluntariness** You participate voluntarily in this research. Therefore, you can withdraw your participation at any time during the research. All data we have collected from you will be deleted permanently.

**More information** Should you want more information on this research study, now or in future, please contact Justine Meyer via [justine.meyer@wur.nl](mailto:justine.meyer@wur.nl).

**CONSENT:** Clicking on the "Next" button below indicates that: • you have read the above information

- you voluntarily agree to participate
- you are at least 18 years of age

#### End of Block: Intro

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#### Start of Block: Nutrition eval

Q22 Thanks for participating! For the next questions, simply **answer as honestly as possible**. There are no right or wrong answers. We only want you to be spontaneous.



Q3 Please rank the following products regarding their **healthiness** by dragging them (1 being the healthiest and 4 the least healthier)



	Per 100 g
Energy	1840 kJ 440 kcal
Fat	15.5 g
Of which saturates	10.3 g
Carbohydrates	61.7 g
Of which sugars	2.1 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g



	Per 100 g
Energy	1598 kJ 382 kcal
Fat	1.1 g
Of which saturates	0.4 g
Carbohydrates	77.9 g
Of which sugars	19.9 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g



	Per 100 g
Energy	1612 kJ 388 kcal
Fat	3.1 g
Of which saturates	1.0 g
Carbohydrates	71.7 g
Of which sugars	50.8 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g







	Per 100 g
Energy	1901 kJ 455 kcal
Fat	20.8 g
Of which saturates	3.9 g
Carbohydrates	49.7 g
Of which sugars	2.7 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g









Q5 Please look and compare the products below, and indicate your perception about their **amount of vitamins and minerals** along the scale.

	Poor in vitamins and minerals (1)	Somewhat low in vitamins and minerals (2)	Somewhat high in vitamins and minerals (3)	Rich in vitamins and minerals (4)	I don't know (5)																		
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Q8 Please look and compare the products below, and indicate your perception about their **nutritional quality** along the scale.

	Poor nutritional quality (1)	Somewhat low nutritional quality (2)	Somewhat high nutritional quality (3)	Good nutritional quality (4)	I don't know (5)																		
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Q9 Please look and compare the products below, and indicate your perception about their ability to help prevent diet-related diseases along the scale.

	Does not help prevent at all (1)	Barely helps prevent (2)	Considerably helps prevent (3)	Helps prevent to a large extent (4)	I don't know (5)																		
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End of Block: Nutrition eval

Start of Block: Nutrition Associations

Q21 For the following questions, you'll see the products again. Please tell us any **associations** that come to your minds when you see each product. Please use single words separated by a comma.

Q11



	Per 100 g
Energy	1840 kJ 440 kcal
Fat	15.5 g
Of which saturates	10.3 g
Carbohydrates	61.7 g
Of which sugars	2.1 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g

What other associations do you have with this product?

Q19



	Per 100 g
Energy	1901 kJ 455 kcal
Fat	20.8 g
Of which saturates	3.9 g
Carbohydrates	49.7 g
Of which sugars	2.7 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g

What other associations do you have with this product?

Q20



	Per 100 g
Energy	1612 kJ 386 kcal
Fat	3.1 g
Of which saturates	1.0 g
Carbohydrates	71.7 g
Of which sugars	50.8 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g

What other associations do you have with this product?

Q10



	Per 100 g
Energy	1598 kJ 382 kcal
Fat	1.1 g
Of which saturates	0.4 g
Carbohydrates	77.9 g
Of which sugars	19.9 g
Fibre	7.4 g
Protein	9.1 g
Salt	0.5 g

What other associations do you have with this product?

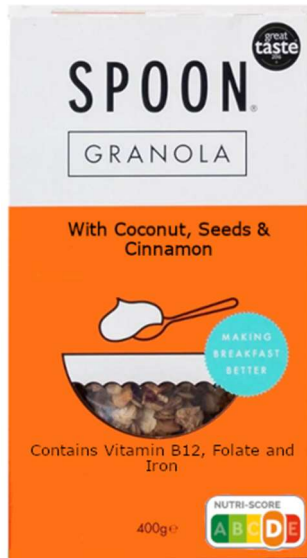
End of Block: Nutrition Associations

Start of Block: Claims eval

Q30 Thanks for participating! For the next questions, simply **answer as honestly as possible**. There are no right or wrong answers. We only want you to be spontaneous.



Q31 Please rank the following products regarding their **healthiness** by dragging them (1 being the healthiest and 4 the least healthier)









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Page Break







Q32 Please look and compare the products below, and indicate your perception about their **amount of vitamins and minerals** along the scale.

	Poor in vitamins and minerals (1)	Somewhat low in vitamins and minerals (2)	Somewhat high in vitamins and minerals (3)	Rich in vitamins and minerals (4)	I don't know (5)
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break




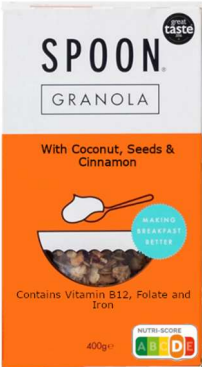


Q33 Please look and compare the products below, and indicate your perception about their **nutritional quality** along the scale.

	Poor nutritional quality (1)	Somewhat low nutritional quality (2)	Somewhat high nutritional quality (3)	Good nutritional quality (4)	I don't know (5)
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break



Q34 Please look and compare the products below, and indicate your perception about their ability to help prevent diet-related diseases along the scale.

	Does not help prevent at all (1)	Barely helps prevent (2)	Considerably helps prevent (3)	Helps prevent to a large extent (4)	I don't know (5)
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Claims eval

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Start of Block: Claims associations

Q35 For the following questions, you'll see the products again. Please tell us any **associations** that come to your minds when you see each product. Please use single words separated by a comma.

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Q36



What other associations do you have with this product?

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Q37



What other associations do you have with this product?

---

Q38



What other associations do you have with this product?

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Q39



What other associations do you have with this product?

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End of Block: Vitamins associations

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Start of Block: ingredients eval

Q41 Thanks for participating! For the next questions, simply **answer as honestly as possible**. There are no right or wrong answers. We only want you to be spontaneous.



Q42 Please rank the following products regarding their **healthiness** by dragging them (1 being the healthiest and 4 the least healthier)



**Ingredient List:**  
wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, coconut oil, salt, cinnamon



**Ingredient List:**  
whole meal wheat flour, whole meal oat flour, sugar, whole meal rye flour, wheat flour, wheat starch, sunflower oil, wheat syrup, agave syrup, whole meal corn flour, whole meal rice flour, seeds (sunflower, pumpkin), coconut flakes, dried wheat syrup, invert sugar syrup, salt, natural flavourings, caramelised sugar, emulsifier: lecithin, antioxidant: tocopherol-rich extracts, cinnamon



**Ingredient List:**  
 whole meal wheat  
 flour, sugar, rice  
 flour, coconut oil,  
 wheat starch, corn  
 grit, calcium  
 carbonate, glucose  
 syrup, seeds  
 (sunflower,  
 pumpkin), coconut  
 flakes, emulsifier:  
 lecithin, salt,  
 maltodextrin,  
 natural flavouring,  
 caramel sugar  
 syrup, cinnamon,  
 baking agent:  
 sodium carbonate,  
 colouring agent:  
 carotin,  
 antioxidant:  
 tocopherol-rich  
 extracts







**Ingredient List:**  
 whole meal wheat  
 flour, seeds  
 (sunflower,  
 pumpkin), coconut  
 flakes, agave  
 syrup, sunflower  
 oil, salt, cinnamon

Page Break







Q43 Please look and compare the products below, and indicate your perception about their **amount of vitamins and minerals** along the scale.

	Poor in vitamins and minerals (1)	Somewhat low in vitamins and minerals (2)	Somewhat high in vitamins and minerals (3)	Rich in vitamins and minerals (4)	I don't know (5)
 <p><b>Ingredient List:</b> whole meal wheat flour, whole meal oat flour, sugar, whole meal rye flour, wheat flour, wheat starch, sunflower oil, wheat syrup, agave syrup, whole meal corn flour, whole meal rice flour, seeds (sunflower, pumpkin), coconut flakes, dried wheat syrup, invert sugar syrup, salt, natural flavourings, caramelised sugar, emulsifier: lecithin, antioxidant: tocopherol-rich extracts, cinnamon</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p><b>Ingredient List:</b> wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, coconut oil, salt, cinnamon</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p><b>Ingredient List:</b> whole meal wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, sunflower oil, salt, cinnamon</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p><b>Ingredient List:</b> whole meal wheat flour, sugar, rice flour, coconut oil, wheat starch, corn grit, calcium carbonate, glucose syrup, seeds (sunflower, pumpkin), coconut flakes, emulsifier: lecithin, salt, maltodextrin, natural flavouring, caramel sugar, syrup, cinnamon, baking agent: sodium carbonate, colouring agent: carotin, antioxidant: tocopherol-rich extracts</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break



Q44 Please look and compare the products below, and indicate your perception about their **nutritional quality** along the scale.



	Poor nutritional quality (1)	Somewhat low nutritional quality (2)	Somewhat high nutritional quality (3)	Good nutritional quality (4)	I don't know (5)
<div><p><b>Ingredient List:</b> whole meal wheat flour, whole meal oat flour, sugar, whole meal rye flour, wheat flour, wheat starch, sunflower oil, wheat syrup, agave syrup, whole meal corn flour, seeds (sunflower, pumpkin), coconut flakes, dried wheat syrup, invert sugar syrup, salt, natural flavourings, caramelised sugar, emulsifier: lecithin, antioxidant: tocopherol-rich extracts, cinnamon</p></div>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div><p><b>Ingredient List:</b> wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, coconut oil, salt, cinnamon</p></div>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div><p><b>Ingredient List:</b> whole meal wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, sunflower oil, salt, cinnamon</p></div>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div><p><b>Ingredient List:</b> whole meal wheat flour, sugar, rice flour, coconut oil, wheat starch, corn grit, calcium carbonate, glucose syrup, seeds (sunflower, pumpkin), coconut flakes, emulsifier: lecithin, salt, maltodextrin, natural flavouring, caramel sugar syrup, cinnamon, baking agent: sodium carbonate, colouring agent: carotin, antioxidant: tocopherol-rich extracts</p></div>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break





Q45 Please look and compare the products below, and indicate your perception about their ability to help prevent diet-related diseases along the scale.

	Does not help prevent at all (1)	Barely helps prevent (2)	Considerably helps prevent (3)	Helps prevent to a large extent (4)	I don't know (5)
 <p><b>Ingredient List:</b> whole meal wheat flour, whole meal oat flour, sugar, whole meal rye flour, wheat flour, wheat starch, sunflower oil, wheat syrup, agave syrup, whole meal rice flour, whole meal rice flour, seeds (sunflower, pumpkin), coconut flakes, dried wheat syrup, invert sugar syrup, salt, natural flavourings, caramelised sugar, emulsifier: lecithin, antioxidant: tocopherol-rich extracts, cinnamon</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p><b>Ingredient List:</b> wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, coconut oil, salt, cinnamon</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p><b>Ingredient List:</b> whole meal wheat flour, seeds (sunflower, pumpkin), coconut flakes, agave syrup, sunflower oil, salt, cinnamon</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p><b>Ingredient List:</b> whole meal wheat flour, sugar, rice flour, coconut oil, wheat starch, corn grit, calcium carbonate, glucose syrup, seeds (sunflower, pumpkin), coconut flakes, emulsifier: lecithin, salt, maltodextrin, natural flavouring, caramel sugar syrup, cinnamon, baking agent: sodium carbonate, colouring agent: carotin, antioxidant: tocopherol-rich extracts</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

End of Block: ingredients eval

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## Start of Block: ingredients Associations

Q46 For the following questions, you'll see the products again. Please tell us any **associations** that come to your minds when you see each product. Please use single words separated by a comma.

-----

Q47



**Ingredient List:**  
wheat flour, seeds  
(sunflower, pumpkin),  
coconut flakes, agave  
syrup, coconut oil, salt,  
cinnamon

What other associations do you have with this product?

-----

Q48



**Ingredient List:**  
whole meal wheat  
flour, seeds  
(sunflower,  
pumpkin), coconut  
flakes, agave  
syrup, sunflower  
oil, salt, cinnamon

What other associations do you have with this product?

-----

Q49



**Ingredient List:**  
whole meal wheat  
flour, sugar, rice  
flour, coconut oil,  
wheat starch, corn  
grit, calcium  
carbonate, glucose  
syrup, seeds  
(sunflower,  
pumpkin), coconut  
flakes, emulsifier:  
lecithin, salt,  
maltodextrin,  
natural flavouring,  
caramel sugar  
syrup, cinnamon,  
baking agent:  
sodium carbonate,  
colouring agent:  
carotin,  
antioxidant:  
tocopherol-rich  
extracts

What other associations do you have with this product?

---

Q50



**Ingredient List:**  
whole meal wheat  
flour, whole meal oat  
flour, sugar, whole  
meal rye flour, wheat  
flour, wheat starch,  
sunflower oil, wheat  
syrup, agave syrup,  
whole meal corn  
flour, whole meal rice  
flour, seeds  
(sunflower,  
pumpkin), coconut  
flakes, dried wheat  
syrup, invert sugar  
syrup, salt, natural  
flavourings,  
caramelised sugar,  
emulsifier: lecithin,  
antioxidant:  
tocopherol-rich  
extracts, cinnamon

What other associations do you have with this product?

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End of Block: ingredients Associations

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Start of Block: Personal questions block

Q12 What information would you consult before buying the product (price and net quantity are the same)?

- ☐ Ingredient List (1)
- ☐ Brand (2)
- ☐ Health Claims (3)
- ☐ Other: (4) \_\_\_\_\_
- ☐ None (5)
- 

Q13 How often to you consult the following information on food packaging when buying food products?

	Never (1)	Rarely (2)	Occasionally (3)	Most of the time (4)	Always (5)
Nutrition information (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ingredient List (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health & Nutrition Claims (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q15

Did you notice these labels on the packages in the previous questions?

- ☐ Yes (8)
- ☐ No (9)
-

Q44

Do you know these labels and what information they convey?

- ☐ Definitely yes (1)
  - ☐ I guess so (2)
  - ☐ I guess not (3)
  - ☐ Definitely not (4)
- 

Page Break

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Q14

How important is a healthy diet for you?

- ☐ Extremely important (1)
  - ☐ Very important (2)
  - ☐ Moderately important (3)
  - ☐ Slightly important (4)
  - ☐ Not at all important (5)
- 

Q16 What is your gender?

- ☐ Male (1)
  - ☐ Female (2)
  - ☐ Non-binary (3)
  - ☐ I prefer not to say (4)
-

Q17 How old are you?

- ☐ 18 - 30 years (1)
  - ☐ 31 - 40 years (2)
  - ☐ 41 - 50 years (3)
  - ☐ 51 - 60 years (4)
  - ☐ older than 60 years (5)
- 

Q18 What is the highest level of school education you successfully completed?

- ☐ High School (1)
  - ☐ University Entry Diploma (2)
  - ☐ Bachelor's degree (3)
  - ☐ Master's degree (4)
  - ☐ PhD (5)
  - ☐ I prefer not to say (6)
- 

Q19 Where do you currently live?

- ☐ Netherlands (1)
- ☐ Germany (2)
- ☐ other EU-country (3)
- ☐ non-EU country (4)

End of Block: Personal questions block

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