

JRC TECHNICAL REPORT

Differences in composition of seemingly identical branded food products: Impact on consumer purchasing decisions and welfare

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2020



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EU Science Hub

<https://ec.europa.eu/jrc>

JRC118149

EUR 30026 EN

PDF

ISBN 978-92-76-14303-1

ISSN 1831-9424

doi:10.2760/51123

Luxembourg: Publications Office of the European Union, 2020

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How to cite this report: Colen, L., Chrysochoidis, G., Ciaian, P., Di Marcantonio, F., *Differences in composition of seemingly identical branded food products: Impact on consumer purchasing decisions and welfare*, EUR 30026 EN, European Union, Luxembourg, 2020, ISBN 978-92-79-14303-1, doi:10.2760/51123, JRC118149.

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Executive Summary

The issue of Differences in Composition of Seemingly Identical branded Products (DC-SIP) refers to cases where a good in one Member State is marketed as identical to a good marketed in other Member States, while in reality that good has significantly different composition or characteristics (European Commission, 2019a). The main concern is that “in some parts of Europe, people are sold food of lower quality than in other countries, despite the packaging and branding being identical”, as stated by President Juncker (European Commission, 2017b).

This report provides a conceptual analysis of whether and how consumer purchasing decisions and welfare are affected by the fact that the same brand owner offers seemingly identical branded food products with different composition in different countries’ markets. Based on the conceptual and empirical knowledge developed in the fields of demand theory, behavioural economics, marketing and consumer psychology, this report develops a framework to analyse the formation of consumer quality perceptions, purchasing decisions and welfare.

We start from a basic neoclassical utility approach to assess the different possible effects of DC-SIP on consumer purchases and welfare. Given the crucial role of quality perception in determining consumers’ valuation of a product, we then perform a more detailed analysis of the factors shaping quality perception, based on the Total Food Quality Model. This sheds light on how food quality perception may differ across countries and individual consumers, and how this relates to the issue of DC-SIP. Finally, the report addresses how information asymmetry regarding DC-SIP may lead to the disconfirmation of consumers’ expectations once consumers realise or are informed about differences in composition between product versions. The role of deception and unfairness perception on consumer decision-making and welfare is analyzed in order to understand consumers’ reactions to DC-SIP.

The different stages of the analysis and results are summarised below:

The literature shows that consumers care about the composition, characteristics and perceived quality of food products they consume. DC-SIP might therefore affect consumers’ purchasing decisions and welfare, if composition, characteristics and perceived quality differ between product versions offered in different countries. However, the impact of DC-SIP is not straightforward; it depends on consumer perception formation and preferences, and is therefore likely to be heterogeneous across individual consumers and countries.

Neoclassical utility theory

In a utility framework, a rational consumer decides to purchase a product when the value or utility the consumer believes they will obtain from consuming a product is higher than the cost of consuming the product (i.e. the price).

- DC-SIP will negatively affect consumer purchasing behaviour and welfare if consumers perceive and value the quality of the own-country product version to be lower than that of the product versions in other countries, as long as any lower price of that version does not offset the lower consumer valuation.
- DC-SIP will not affect or positively affect consumer purchasing behaviour and welfare
 - (i) if consumers perceive and value the quality of the own-country product version as equal to versions from other countries,
 - (ii) if consumers perceive and value the quality of the own-country product version as higher than versions from other countries, for example because companies succeed in adapting product versions to the specific preferences in each country, and
 - (iii) if the lower price of the own-country version compared to the price of the other-country version offsets the lower consumer valuation of the own-country version.
- Given that price-setting is influenced by many determinants, it is hard to predict the price of the other-country version in different markets.



Crucial in this assessment is how individual consumers perceive and value different product versions. **Individual consumers** may have heterogeneous perceptions of and preferences for food quality, and thus **might be affected differently by DC-SIP across and within countries**.

Total Food Quality model

The formation of consumers' quality perceptions is a complex and often subjective process: consumers use an array of available signals or cues to infer the quality of food products, ultimately determining their purchasing behaviour. We use Grunert's (2005) conceptual model of food quality perception to analyse the formation of quality perception in the context of DC-SIP.

→ **The vertical dimension of food quality perception** refers to the use of **intrinsic cues** (physical properties of the product) or **extrinsic cues** (e.g. brand name, geographic origin, packaging) to infer the food quality of a product.

→ **The horizontal dimension of food quality perception** refers to consumers' adjustment of quality perception over time (before and after purchase):

- (i) before purchase, consumers' quality assessment is based on observable intrinsic and extrinsic cues;
- (ii) after purchase, their quality perception might be confirmed or disconfirmed when unobservable cues are revealed or after product is experienced (tasted) which will determine repurchasing decisions; and
- (iii) credence qualities (e.g. health or organic production processes, occurrence of DC-SIP, or other characteristics which cannot be observed or experienced by consumers even after they consume the product) might be revealed by information provided at any stage of the purchasing choice process, and may lead to adjustment of quality perception and repurchasing decisions.

→ Consumers may not use all cues AND different cues might be used by different consumers to derive their food quality perception. This implies that quality evaluation of product versions will differ between and within countries.



Empirical studies show that consumers' product quality perception is often based on extrinsic quality cues such as brand, place of origin, packaging, price, and product category, which may lead to potential intrinsic differences in composition between product versions going unnoticed. Even when the composition of the versions is the same, consumers purchasing choices may be different if extrinsic factors differ between versions.

The more strongly quality perception is based on specific extrinsic quality cues, the less likely it is that DC-SIP will be noticed, and the less likely it is that consumers' purchasing decisions and welfare will be affected by compositional differences between branded products.

Information asymmetry related to DC-SIP

The complexity of consumer decision-making in a context involving numerous informational cues and time constraints, and in the presence of strong extrinsic cues, will lead to DC-SIP likely going unnoticed by most consumers, particularly when consumers are unable to physically compare product versions from different countries. Moreover, certain compositional differences (e.g. relating to the origin of the ingredients used) may be impossible to observe, even when consumers have the chance to compare and experience different product versions.

When consumers are exposed to the DC-SIP issue through communication with other consumers, or through media coverage, this might result in consumer dissatisfaction, and generate a consumer reaction which cannot be easily captured in the above utility framework, but which might nonetheless affect their purchasing decisions and welfare.



Marketing and consumer psychology literature suggests that DC-SIP may lead to a **perception of deception** (disconfirmation of expected value) and **perception of unfairness** (resulting from product versions not being equal across countries) in consumers.

This may explain why in some cases relatively strong consumer reactions might be observed, even if differences in composition are small and/or are not detectable by consumers. Such reactions to DC-SIP are expected to be stronger in markets where the (perceived) low-quality version is offered, as opposed to countries where the (perceived) high-quality version is offered.



Consumer response may differ depending on how strong perceptions of unfairness and deception are, and depending on several contextual factors.

- In line with empirical studies on price unfairness, this perceived unfairness (and corresponding reactions) is expected to be stronger in markets receiving (what is perceived as) the lower quality version as compared to markets receiving (what is perceived as) the higher quality version.
- When perceptions of deception or unfairness are weak, **consumer response may be only a short-term reaction**, after which consumers may revert to their habitual purchasing pattern.
- When the perceived unfairness is strong, or disconfirmation of expectations and resulting deception is sizable, it might generate **strong and long-lasting consumer reactions**: reconsideration of purchasing decisions, reduced purchasing intentions, switch to other brands, reduction of brand trust and company image, breakdown of consumer trust in the uniformity or status they previously associated with brands.
- However, even in the presence of high perceived unfairness and the disconfirmation of expectations, **consumers do not necessarily respond by changing their purchasing behaviour**, for various reasons: budget constraints, habit or cultural factors, unavailability of better alternative products, and/or the fact that their negative experience with DC-SIP may simply play a limited role in their motivations for product choice.

Drawing on the conceptual and empirical literature across fields, this report shows that the impact of DC-SIP on consumer choices and welfare is not straightforward. While consumers care about food quality, differences between product versions are likely to go unnoticed if consumers are not explicitly informed of them. Moreover, even when differences are noticed, different consumers may not have the same preference rankings for different versions. Finally, the price at which different product versions are offered also matters. This heterogeneity means that average purchasing and welfare implications may differ between countries' markets, and that individual consumers are likely to be differentially affected.

In addition to the question of whether consumers would or would not prefer and purchase a different version than the one offered on their market, the existence of different product versions with potentially different quality valuations may in itself be a source of consumer dissatisfaction. The report explains how DC-SIP may lead to consumer perception of deception and unfairness which may negatively affect brand trust and affect consumer reactions, purchasing behaviour and welfare in the short- or longer term. Consumers may voice their concerns, decide not to buy specific products, products from a certain brand, or even lose trust in global brands and turn to local goods instead. Depending on how strong the feelings of deception and unfair treatment are, these reactions may be very weak or strong, and may be short-term, with consumers quickly reverting to habitual purchasing patterns, or may be long-lasting.

Acknowledgements

The authors aim to acknowledge participants at the stakeholder meetings held on 14 May 2019 in Seville and 14 February 2020 in Brussels, respectively, where an early version of this report was presented. We thank François Dessart, Jesus Barreiro Hurlé, Luisa Menapace and Carlo Russo for interesting discussions and suggestions on the topic. We would like to thank Jaroslav Swierczyna (DG GROW) for the valuable collaboration and support. We thank Stefano Soro, Head of the Food Industry Unit (GROW.D3) and Giampiero Genovese, Head of the Economics of Agriculture Unit (JRC.D4), for their continuing support and additional input into the production of this report.

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Differences in composition of seemingly identical branded food products: Impact on consumer purchasing decisions and welfare

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1 Introduction

The issue of Differences in Composition of Seemingly Identical branded Products (DC-SIP) refers to cases where a good in one Member State is marketed as identical to a good marketed in other Member States, while in reality that good has significantly different composition or characteristics (European Commission, 2019a). The main concern is that “in some parts of Europe, people are sold food of lower quality than in other countries, despite the packaging and branding being identical”, as stated by President Juncker (European Commission, 2017b).

The objective of this report is to analyse whether and how the DC-SIP issue affects consumers. The report tackles the impact of DC-SIP on consumers primarily from an economic point of view, by analysing how consumer purchasing decisions and welfare are affected by the fact that the same brand offers seemingly identical branded food products which actually have different properties in different locations.

This report is part of a series of reports which aim to improve our understanding of DC-SIP in a comprehensive way. This report aims to provide a conceptual analysis of how DC-SIP may impact consumer purchasing decisions and welfare based on existing scientific studies, and brings together theoretical frameworks and empirical evidence from various relevant disciplines. Note that this report does not provide new empirical analysis. An attempt to empirically estimate the impact of DC-SIP is provided by Di Marcantonio *et al.* (2020), as part of the same project. Also as part of the same project, Colamatteo *et al.* (2020) analyse the incentives for food companies to offer identically marketed products with different compositions or characteristics in different markets, and Nes *et al.* (2020) provide an econometric analysis of which factors determine the occurrence of DC-SIP in food products across the EU.

Based on the conceptual and empirical knowledge developed in the economic literature, this report aims to provide rationale and understanding for how Impacts of DC-SIP consumer choices and welfare. The analyses are developed based on the available theoretical (conceptual) and empirical studies in demand theory, behavioural economics, marketing, consumer psychology and other interlocking fields in the presence of product quality uncertainty and unobservability.

1.1 What do we mean by DC-SIP?

The problem of Differences in Composition of Seemingly Identical branded Products (DC-SIP) refers to cases where a good in one Member State is marketed as identical to a good marketed in other Member States, while in reality that good has significantly different composition or characteristics. Claims that different quality products are being sold in different countries under the same name and packaging have been raised by several EU Member States (MS). Media reports and various policy documents have often used the term “dual quality”, after Central and Eastern MS argued that they were being sold products of inferior quality (The Economist, 2017). Since differences in composition do not necessarily affect quality, and since food quality is a complex and largely subjective concept, this report uses the term “Differences in Composition of Seemingly Identical, Branded Products (DC-SIP)”.

Most of these refer to food products, but similar claims have been made regarding cosmetics and detergents. Tests on food products performed in a number of Central and Eastern MS indicated different compositions for a number of products sold there, compared to those sold under the same brand and in similar packaging in some

Western MS (Borzan, 2017; CEU, 2017; MPSR, 2017; Néhib, 2017; Parliament, 2017; SZPI, 2015). In June 2019, the results on the JRC pan-European testing campaign that has analysed nearly 1,400 food products in 19 EU Member States were published (European Commission, 2019b). The study shows that 9% of the products compared differed in composition, although the front of the pack was identical. Additionally, 22% of products had a different composition and a similar front of pack.

1.2 Policy context

The concern over DC-SIP has been growing over the last few years. Surveys show that consumers are concerned about the possible differences in quality of products with the same brands and packaging being distributed in the single market, and the European Parliament called on the European Commission to investigate the issue (European Parliament, 2013). The DC-SIP issue was discussed in the European Council in 2016, where the need to find a solution at European level was stressed (CEU, 2016). In his State of the Union Address in 2017, President Juncker explicitly referred to the Commission's efforts to address the issue of DC-SIP at European level (European Commission, 2017b).

In 2017, the European Commission issued a set of guidelines on the application of EU food and consumer protection law to the DC-SIP issue (European Commission, 2017a). The guidance explained how the relevant legal requirements, especially the Unfair Commercial Practices Directive 2005/29/EC (UCPD), should be applied by the national authorities in analysing potential DC-SIP issues.

They proposed a step-wise assessment to analyse whether a product breaches the UCPD (European Commission, 2017a).

In April 2018, the European Commission tabled a proposal for a directive on the modernisation of EU consumer protection rules within the framework of the 'New Deal for Consumers' (European Commission, 2018). Among other things, it also aimed to introduce more specific rules on the DC-SIP issue by amending the UCPD. The European Parliament and the Council adopted the amending directive on 27 November 2019¹ (EU, 2019). The new provision in the UCPD establishes that the competent authorities must classify DC-SIP practices as misleading on a case-by-case basis, taking account of the impact of the practice on the consumer transactional (purchasing) decisions.

1.3 Objectives

This report therefore aims to improve our understanding of how consumer purchasing decisions and welfare are affected by DC-SIP. It aims to provide a conceptual analysis of the impact of DC-SIP on consumers. Note that this report does not provide an empirical analysis of how purchasing decisions and welfare are affected. An attempt to empirically estimate the impact of DC-SIP is provided by Di Marcantonio *et al.* (2020).

This report takes the rationale of brand owners applying DC-SIP practices – which is analysed in detail in Colamatteo *et al.* (2020), as a part of the same project – as given. Building on this work, this report goes deeper into analysing consumer purchasing decisions with respect to perceived product quality, consumer perception formation, and the role of disconfirmation and perceived unfairness, in order to analyse how consumer purchasing decisions and welfare are affected by the fact that a brand owner offers seemingly identical branded food products which actually have different properties, without adequately informing consumers of these differences.

1.4 Structure of the report

In order to assess the impact of DC-SIP on consumer purchasing behaviour and welfare, the report first takes a conceptual approach to analysing consumer behaviour (Section 2). In a simple utility framework (Section 2.1), the report illustrates different possible ways that DC-SIP could affect consumer purchasing behaviour and welfare. This framework takes the valuation of a product version as given, while the formation of quality perception and product valuation is known to be a complex process, and to vary by individual, purchase context, product category, and food culture. Depending on the formation of quality perception, consumers may or may not notice or become

¹Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules

concerned about the different composition of versions of seemingly identical branded products, and this will determine which of the possible scenarios is relevant. In Section 2.2 the report therefore conceptualises the formation of consumer quality perception, drawing largely from the fields of marketing and consumer psychology. Section 2.3 expands the existing framework to explicitly include the role of consumers' perception of deception and unfairness, which it shows are relevant to understanding consumer reactions to DC-SIP.

In Section 3, the report explores the shaping of consumer perception of food quality in detail. In it, the report analyses the role of different product characteristics in shaping quality perceptions, with the most important being brand, price and geographic origin. This analysis is based on the conceptual and empirical literature from the fields of economics, marketing and consumer psychology, as well as additional streams of knowledge that interface with the topic.

Section 4 of the report explores the potential feelings (perception) of deception and unfairness relating to the disconfirmation of consumers' expectations when they become aware, or are informed, that a product version with different composition is being offered in their country. It describes how this additional dimension of consumer welfare will impact repurchasing decisions, and helps to explain different reactions across countries. Section 5 concludes.

2 Conceptual analysis

In order to assess the impact of DC-SIP on consumer purchasing behaviour and welfare, one needs to understand the process of consumer decision-making. According to the neoclassical approach, consumers trade off the utility or value they derive from a product and the price they pay for it, when deciding whether or not to purchase a product. Lancaster (1966) proposed extending the basic utility theory framework by having preferences linked to objective characteristics or attributes of a commodity, rather than to the commodity itself. This allows product quality to be incorporated into the assessment of consumer purchasing decisions and welfare.

The relationship between the objective characteristics of a food product and the corresponding subjective consumer assessment of quality is not straightforward. The objective characteristics of a food product are its underlying physical characteristics, its composition and the production process that can be identified, measured and documented based on relevant facts. Yet, objective differences in composition do not necessarily translate into quality differences.

When consumers are asked about how they value food products, they invariably respond using layman's terminology across several subjective perception dimensions, psychological and behavioural processes and decision rules, which play a role in shaping the associations people make with food quality (Steenkamp, 1990). Accordingly, consumers in six focus groups in six EU Member States reported that the concept of food quality is linked to many factors, the most relevant ones being related to healthiness, taste, quality of ingredients, smell and appearance, as well as a reliable and trusted brand (Di Marcantonio *et al.*, 2020).

It is not necessarily the objective characteristics of the product, but rather the quality associations that consumers make based on a whole set of attributes, and their behavioural responses to them, which determine consumers' valuation of a product, and ultimately their decision as to whether or not to buy the product.

In understanding the empirical impact of DC-SIP on consumer purchasing decisions and welfare, one must therefore understand how consumer perception is shaped. To account for these factors, this report uses the 'Total Food Quality Model' proposed by Grunert (2005), which conceptualises the formation of quality perception and product expectations in consumer decision-making. Based on this model, the aim is to explain how consumers' decision-making is affected by having been offered a different product version of a branded product. In addition, the practice of offering product versions with differences in composition under similar packaging and branding has itself generated consumer reactions. Dimensions like confirmation of expectations, ethical values, and unfairness perceptions play a role here. The model of Grunert (2005) is extended to account for such potential dimensions in the context of DC-SIP.

2.1 Food quality, purchasing decisions and consumer welfare

A simple utility framework

In order to assess whether consumers are affected by DC-SIP, the question can be reduced to whether consumer purchasing decisions would be different if an alternative product version were offered instead of the own-country version, and whether this would affect consumer welfare positively, negatively or not at all. A useful starting approach is a simplified economic framework, rooted in neoclassical utility theory. This model assumes rational consumers and time-consistent and complete preference rankings, which is not straightforward to defend in reality (this assumption is relaxed in the following sections), but which nevertheless allows for an insightful illustration of possible effects of DC-SIP on purchases and consumer welfare.

The process of quality perception formation and its determinants are not considered at this stage of the analysis. That is, consumers' quality perception and appreciation of different product versions are taken as given. A graphical representation of this model is used to illustrate the various possible scenarios for how two different versions of a seemingly identical product affect consumers' valuation of a product, and how that – given a set of prices – will result in different purchasing behaviour and consumer welfare.

In economic terms, consumer welfare is expressed as the (monetary) utility derived from consuming a product, building on the simple utility function proposed by Mussa and Rosen (1978), which assumes consumers' utility to be a function of a product's quality and consumers' taste for quality. Consumer i located in country c (where $c = A, B, \dots, N$) has a utility function $U_{ic}(x, q; \theta_i)$, where q is the quality of the DC-SIP product, and x is a

composite commodity composed of all other products not covered by DC-SIP. For simplicity, it is assumed that larger values of q indicate unambiguously higher quality varieties², as defined by the characteristics of the product. Consumers differ in the intensity of their taste for quality, indicated by parameter $\theta_i > 0$. This implies the following formulation of consumer utility:

$$U_{ic} = x + \theta_i q$$

According to this equation, a higher level of quality q relating to different composition of a product would translate into a higher utility for consumers.

Let q stand for one unit of a branded food product. Next, assume that a branded product can be produced in different versions. Let q_1 stand for one unit of a branded food product in Version 1 and q_2 for one unit of the same branded food product in Version 2. If q_1 corresponds to the same quality as the alternative product version q_2 , then consumer welfare is not affected by DC-SIP. However, if version q_1 of the DC-SIP product were to objectively correspond to a lower (or higher) quality (compared to the alternative), then the consumer welfare derived from consuming that version would be lower (or higher) compared to consuming the alternative version q_2 . The larger consumers' 'taste for quality' θ_i is, i.e. the more they care about the quality of the product, the more consumer welfare will differ between the two versions. Whether or not consumer purchasing decisions and overall welfare will be affected will depend on the price at which the product is offered.

However, as argued above, quality perception plays a crucial role in consumers' valuation of a product. Therefore, before analysing the potential impacts of DC-SIP, it is expedient to introduce a (subjective) quality perception function $f(q)$ into the consumer utility function. Baltas and Doyle (2001), who comment on random utility maximisation of choice models, also note that this taste for quality θ_i and perception of the quality of product version $f(q)$, can be seen as a higher-order grouping of different sub-components. A consumer's utility function for product version j (for $j = 1, 2, \dots, M$) would then look like this:

$$U_{icj} = x + \theta_i f_i(q_j)$$

How far consumers derive utility from different versions of the branded product, and whether utility differs between versions, will depend on consumers' perceptions of the version, $f_i(q_j)$, and on their preference function, θ_i . A consumer i 's willingness to pay (i.e. their marginal monetary utility) in country c with a taste for quality θ_i and a perception of quality $f_i(q_j)$ for product version j , is then:

$$WTP_{icj}(\theta_i, f_i, q_j) = \theta_i f_i(q_j).$$

For now, it is assumed that $\partial f_i / \partial q_j \geq 0$, which means that any overall increase in the varying quality attribute is positively perceived and valued³. If $\partial f_i / \partial q_j = 0$, this means that consumers do not perceive quality differences.

In line with Baltas and Doyle (2001), this perception of the quality of product version $f_i(q_j)$ and taste for quality θ_i change due to interpersonal heterogeneity and intrapersonal dynamics.⁴ Intrapersonal dynamics may include both state dependence (i.e. effects of past experiences on current utility) and inertia/habit persistence. As will be developed in detail in the next section, quality perception would further depend on a variety of factors (brand name, country of origin, packaging, etc.).

² It is assumed that such an objective quality ranking exists for reasons of simplicity and graphical illustration. In reality, this will in most cases not be obvious. First, compositional differences may not have any impact on the quality of a product. If this is the case, products would be valued equally and would have no impact on consumer purchasing decisions. Second, food quality is a *multi-dimensional* concept. Different composition may affect only specific quality dimensions and different dimensions may have contradictory rankings (e.g. taste vs. health). The overall assessment of the product then depends on consumers' relative valuation of each of those dimensions. Second, as set out in detail below, even within one quality dimension, *quality perception* is highly heterogeneous between consumers. As a result, an objective quality ranking of two versions of a DC-SIP product is in many cases not possible. These issues are discussed in the following sections.

³ Again, such an objective quality ranking is only possible when compositional differences between versions affect at least one quality dimension, and only for a quality dimension which is non-ambiguous. This is not necessarily always the case. Especially in the case of food attributes like sugar or fat content, perceived quality may increase with higher levels of the ingredients only up to a certain point, after which it starts declining. Moreover, when consumers assess products on different dimensions, such as taste and healthiness, perceived quality in these two dimensions may well contradict each other, and as such, the assumption of non-negative marginal utility may not hold.

⁴ Interpersonal heterogeneity may include, for instance, individual characteristics and characteristics related to the consumer segment one belongs to (having both deterministic and probabilistic elements).

In order to evaluate whether consumers' purchasing behaviour is affected by DC-SIP (i.e. the availability of a different version of q), the analysis assesses whether consumers would prefer the alternative version if it were offered. This means that the price at which different product versions are offered needs to be considered. In market equilibrium, each quality version will have a specific price in each country, so $P_c(q_j)$ is the set of price-quality combinations as offered in country c .

The rational consumer is assumed to select the version of the branded product which gives the highest consumer surplus, CS . The consumer surplus from consuming one unit of product version q_j is the difference between willingness to pay, which follows from the consumer's perception and preference functions, and the price of the product version j in country c , P_{cj} :

$$CS_{icj} = CS_{ic}(q_j) = WTP_{ic}(q_j) - P_c(q_j) = \theta_i f_i(q_j) - P_c(q_j)$$

This model and its assumptions make strong abstractions from the complex processes of consumer decision-making, which are developed in the fields of marketing and consumer psychology. In reality, consumers are believed to make choices on multi-attribute products through a set of heuristics and biases (Tversky and Kahneman, 1974) and decision rules including random regret minimisation (Chorus, 2012). Moreover, the view of consumers treating brands via a rather transactional prism is only a part of a larger space of consumer-brand relationships (Fetscherin and Heinrich, 2015) and brand communities (Muniz and O'guinn, 2001; Stokburger-Sauer, 2010). While these choice and consumer-brand relationship models are certainly able to capture real decision-making processes in a more accurate and detailed way, the neoclassical utility framework presented here is still useful in deriving and graphically illustrating the different potential impacts of DC-SIP on consumer purchasing behaviour and welfare.

Graphical representation

In order to graphically illustrate the implications of DC-SIP, assume Version 1 of branded food product is available on the market in country A , and differs slightly in composition from Version 2 of the branded food product sold in country B . This means that product Version 1 has at least some difference in intrinsic technical product specifications compared to product Version 2. Based on the product's visible characteristics, the products are highly similar⁵. While the product versions may be perceived differently by different consumers and no objective quality difference may be present, or no objective quality ranking may be possible, for simplicity assume that product Version 1 is seen as being of equal or lower quality compared to product Version 2⁶.

A graphical illustration is provided, showing how consumer welfare – defined as consumer surplus – is affected in each of the various possible scenarios. All consumers in countries A and B are assumed to be identical (in the following sections this assumption is relaxed), and the illustration relates to a one-time purchasing decision (i.e., not a dynamic purchase context).

The graphical illustration considers the case of product Version 1 being offered in country A at a price that results in positive demand for the product ($WTP_{A1} - P_1 = CS_{A1} > 0$),⁷ and considers how consumer purchasing behaviour and welfare would be different if instead product Version 2 (typically sold in country B) were sold in country A . Three different situations are considered: (1) same valuation and same price, (2) different valuation and same price and (3) different valuation and different price.

(1) Same valuation and same price

⁵ Or at least, they are perceived by consumers as similar. Packaging and labelling are not necessarily exactly the same, but according to the definition of DC-SIP they are considered 'seemingly identical' by consumers. In most cases, differences will be reflected in the ingredients and nutritional composition, which – in line with legal requirements – must correspond to the actual composition of the food product. Yet, even if in theory they can be read from the package, many consumers will not notice the differences, especially if they are small. This may relate to consumers not having the option to physically compare product versions offered in different markets side-by-side, or to consumers being time-constrained, resulting in small or nutritional differences in composition going unnoticed by many. More on this in the following sections.

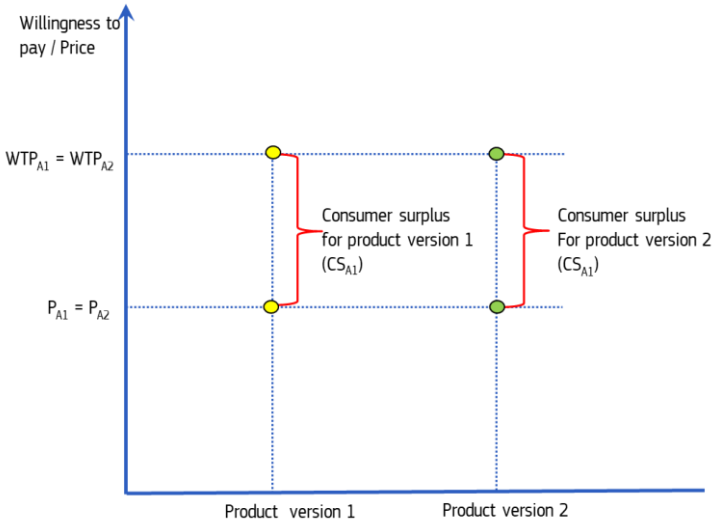
⁶ Only the case where consumer valuation of the alternative product version, Version 2, is higher than or equal to that of product 1 is illustrated, but obviously a corresponding analysis can be made for Version 2 being valued lower than Version 1 by the average consumer in country B . Note that the left-right order of versions across the axis as represented in the graph should not be taken as an indication that an absolute quality ranking of products exists.

⁷ To simplify notations, the subscript i for consumers is dropped.

The situation where the two product versions are perceived and valued equally in country A is illustrated in Figure 1. Consumers value both versions exactly the same, i.e. their willingness to pay for each of the versions is equal ($WTP_{A1} = WTP_{A2}$). If both product versions were offered at the same price ($P_{A1} = P_{A2}$), this would mean that the consumer surpluses - defined as the difference between willingness to pay and the price paid - derived from Version 1 and Version 2 were the same ($CS_{A1} = CS_{A2}$). If consumers were offered both versions at the same time, they would be indifferent. In this case, neither consumer welfare, nor consumer purchasing behaviour is affected by the different composition of seemingly identical branded products.

This will be the case when differences in product versions are very small, when the quality perception process results in the differences going unnoticed, or when the perceived differences (even if significant) are not important to consumers in evaluating the product.

Figure 1. Willingness to pay and consumer surplus in country A: (1) same valuation and same price

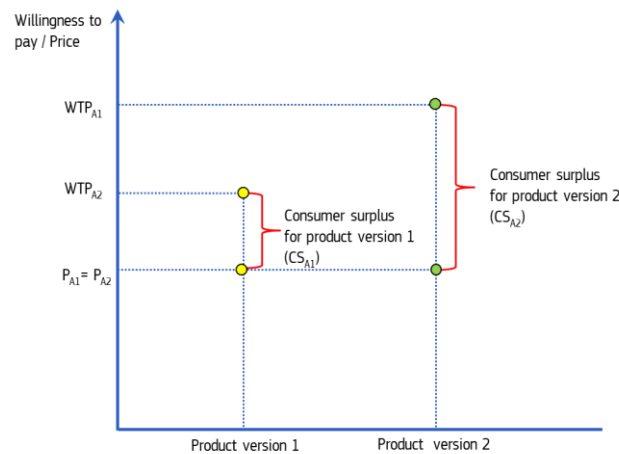


(2) Different valuation and same price

Assume now the situation where the two product versions are perceived and valued differently by consumers, but are offered at the same price to consumers. This means that differences do not go unnoticed, either because consumers have compared the products' ingredients lists, because they experienced (tasted) differences, or because they were informed that the versions were different.

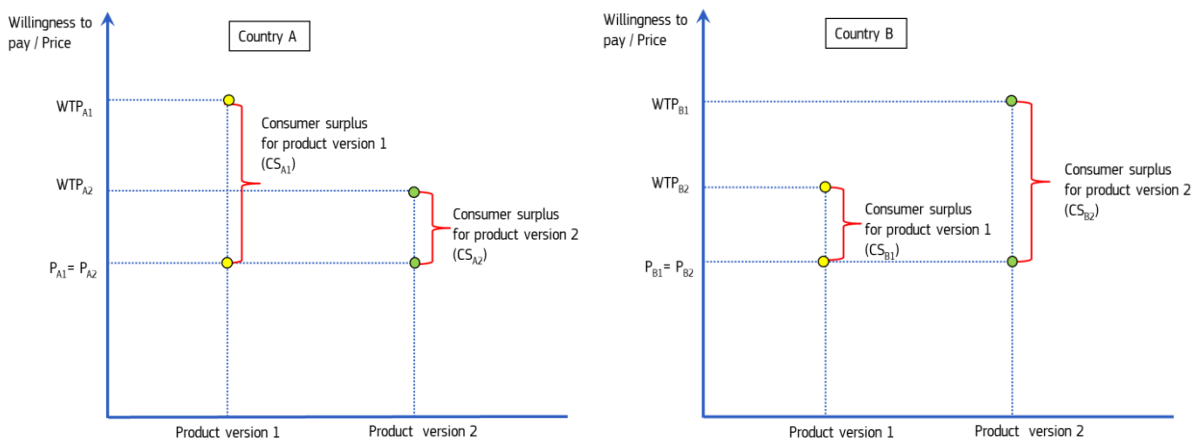
Figure 2 illustrates the case where consumers' willingness to pay for product Version 2 is higher than for own-country product Version 1 in country A ($WTP_{A2} > WTP_{A1}$). If product versions 1 and 2 are offered at the same price, while product Version 1 is perceived to be of lower quality, then rational consumers are expected to choose product Version 2, because the consumer surplus derived from product Version 2 is higher than from own-country Version 1 ($CS_{A2} > CS_{A1}$). So if consumers in country A were offered product Version 2 instead of the own-country product Version 1, their consumer welfare would have been higher. This means that, supposing that the set of alternative food products in the same product category remains the same, the demand for product Version 1 is lower than it would have been if product Version 2 (i.e. the same version as in country B) were offered instead. In this case, consumer purchases of the product, and consumer welfare in country A, are negatively affected by a different version of the DC-SIP product being offered on its market.

Figure 2. Willingness to pay and consumer surplus in country A: (2) different valuation and same price



The opposite may equally well occur. When food manufacturers correctly identify differences in preferences, and adjust product composition to satisfy these, then consumers' valuation of own-country product Version 1 will be higher than the valuation of product Version 2 offered in a different country. In other words, consumers may have a preference for the product version sold in their own country, as compared to the versions available in other countries: i.e. in country A consumers' valuation of product Version 1 will be higher than the valuation of product Version 2 (left-hand panel of Figure 3), whereas in country B consumers' valuation of product Version 2 will be higher than their valuation of product Version 1 (right-hand panel of Figure 3). In this case, DC-SIP is welfare-increasing.

Figure 3. Willingness to pay and consumer surplus in countries A and B: (2) different valuation and same price



(3) Different valuation and different price

Consider now the case where product Version 2 is perceived as higher-quality and valued more highly by consumers in country A than own-country product Version 1 ($CS_{A2} > CS_{A1}$), but it comes at a higher price than product Version 1⁸ (Figure 4). The implications for consumer welfare and purchasing behaviour are now ambiguous, and will depend on the prices of the product versions.

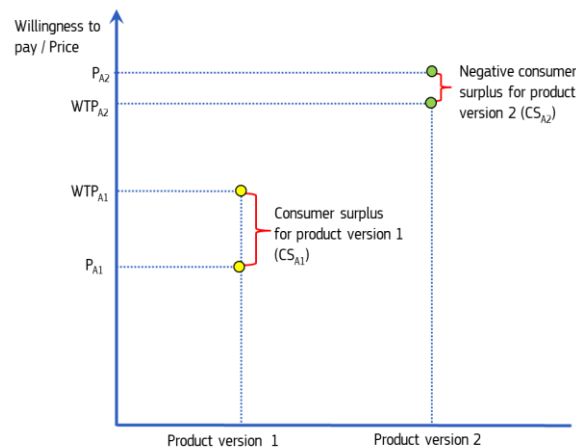
- Case 3A: Negative consumer surplus for product Version 2

The first case concerns the situation where the higher-valued product Version 2 came at a higher price than consumers' valuation for it in country A ($WTP_{A2} - P_{A2} = CS_{A2} < 0$). Consumers would perceive the quality of product

⁸ If Product 2 were offered at a lower price than Product 1, this would result in $CS_{A2} > CS_{A1}$, which would correspond to situation two above.

Version 2 as higher than that of product Version 1, and would be willing to pay a higher price for it, but not as much higher as the price charged for it in country A. As a result, the consumer surplus for other-country product Version 2 would be negative, and a rational consumer would not buy it. In this case, consumers in country A would lose out if their own-country Version 1 were replaced by product Version 2, and demand for the product would drop. If this were true for a large share of consumers, this would probably mean that the product would simply not be offered on the market, as discussed in detail in Colamatteo *et al.*(2020).

Figure 4. Willingness to pay and consumer surplus in country A: (3) different valuation and different price – case 3A



- Case 3B: Positive consumer surplus for product Version 2

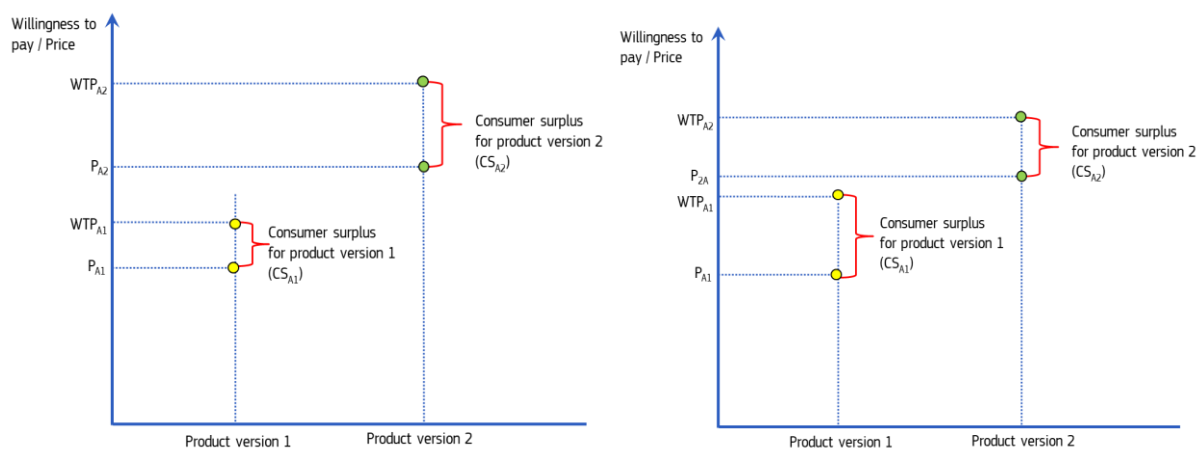
The second case concerns the situation where the other-country product Version 2 is valued more highly than own-country product Version 1 and is offered at a higher price than product Version 1. Contrary to case 3A, both versions result in a positive consumer surplus. Which product will be preferred then depends on whether the difference in consumer preferences between product Version 2 and 1 is larger than the difference in prices between the two. The left-hand panel of **Error! Reference source not found.** illustrates the case of consumer surplus for Version 2 being higher than for Version 1 ($CS_{A1} < CS_{A2}$). As a result, consumer welfare and purchases would be higher if country A were offered product Version 2 instead of 1. In this case, DC-SIP thus affects consumer welfare negatively.

In the right-hand panel of **Error! Reference source not found.**, the higher price of other-country product Version 2 is too high for the additional willingness to pay, and consumers derive a larger surplus from own-country product Version 1 than from product Version 2. As such, consumer purchasing decisions for product Version 1 is positively affected and DC-SIP is welfare-increasing.

Note that it is hard to anticipate the price at which other-country product Version 2 would hypothetically be offered in country A. In the case of DC-SIP, Version 2 is only offered in the other country B, so the price at which it would be potentially offered in country A cannot be observed. Price setting of a product is the result of combination of many factors. It is partially determined by ingredients costs, production costs and distribution costs. But prices are also set in response to income level, brand valuation, product positioning, level of competition in the market, store location etc. All these determinants may differ considerably between countries and local markets. Different DC-SIP versions are therefore likely to be offered at very different prices in different markets. But even if exactly the same products were offered in the two markets, prices in the different markets may remain largely different.

Regarding the hypothetical price at which the other-country version would be offered in country A, this likely depends on the role of ingredients and production costs in the final price. If different versions imply limited differences in ingredient and production costs, then the final price of other-country Version 2 when offered in country A is expected to be close to the price at which the own-country version is offered. If differences in ingredients or composition are substantial and affect production costs, this could translate into different prices. In this case, the consumer will trade off the potential different valuation for the other-country version against its different price when making purchasing decisions (for an example see Figure 5).

Figure 5. Willingness to pay and consumer surplus in country A: (3) different valuation and different price – case 3B



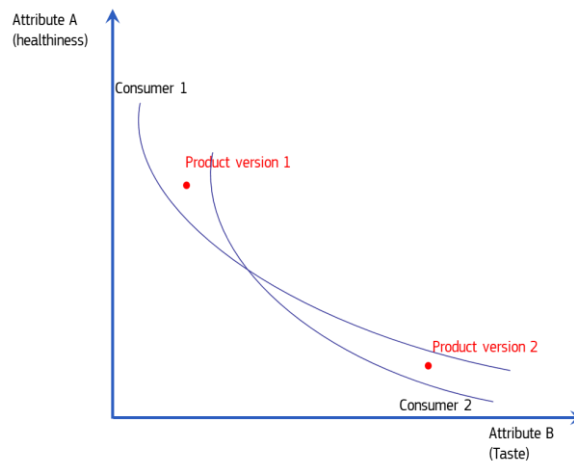
Consumer heterogeneity

The graphs can be interpreted as representing the preferences of an average consumer in each country. Yet quality perception formation is a complex process, and the perceptions and preferences of consumers differ widely not only *between*, but also *within* countries. Individual consumers within the same country thus may well have very different valuations of product versions 1 and 2, and may therefore find themselves in a different situation and respond differently to DC-SIP.

As will be explored in detail in the remainder of the report, consumers differ in their perception of quality cues, the quality cues they find relevant and feel confident in using, the dimensions of quality that matter most for them, their relative preference for a product versus other product types and categories, their income, and how they prefer to spend it. As a result, while some consumers may find themselves in situation (1) of not being aware of different product versions in different country-markets, or perceiving differences between them as unimportant (shown in Figure 1), other consumers within the same country might notice the differences.

And among those who notice or have been made aware of the different versions, quality perception and preferences may vary. For example, Figure 6 illustrates how consumers may have different preferences for different quality dimensions. Consider a product with two attributes, one being health-related and one being taste-related. Even if two consumers have an equal perception of the product along these two quality dimensions, consumer 1 may care more about the health dimension, while consumer 2 cares more about the taste dimension. As a result, consumer 1 will value product Version 2 higher than product Version 1, which is tastier but less healthy, while the opposite holds for consumer 2.

Figure 6. Heterogeneous consumer preferences within country A



As a result, the willingness to pay will be different for each individual consumer. If the healthier other-country product Version 2 is offered in country A instead of the tastier own-country product Version 1 (assuming the same price for both versions), it will increase utility for consumer 1, while it will reduce utility for consumer 2, who actually preferred the own-country version. Therefore, the introduction of a different version of a product may be beneficial for one consumer, while it may reduce utility for another consumer at the same time. Similar considerations hold with respect to the price consumers are willing to pay for additional quality. Depending on personal characteristics, but also budget constraints, for example, consumers' 'taste for quality' is heterogeneous across consumers within the same country, and even for the same consumer at different points in time.

Summary: implication of DC-SIP for consumers

The above analysis indicates that the impact of DC-SIP on consumer purchasing decisions and welfare is not straightforward. Consumers care about food quality, but once different consumer preferences, food quality perceptions, and prices are taken into account, the theoretical impact of DC-SIP is neither obvious nor homogeneous. Presenting consumers with the product version typically offered in a different country-market, instead of with the product version they were offered under DC-SIP, can affect purchasing decisions and welfare either positively, negatively or not at all.

(1) DC-SIP will affect consumer welfare only when consumers perceive and value the quality of the own-country product version and alternative product version differently. If not explicitly informed about the differences, consumers may not be able to experience differences in composition and do not necessarily notice them based on the ingredients lists. And even if differences are noticed, consumers do not necessarily care about them. As will be discussed in more detail in Chapter 0, small differences between product versions may go unnoticed or not be valued and will therefore not affect purchasing decisions or consumer welfare.

(2) If consumers do identify and value differences between the product versions, consumers' quality perception and valuation of the own-country version may be higher or lower than the other-country version of the product. When companies succeed in adapting product versions to specific preferences in each country, then on average the own-country product version will be valued more highly than (and preferred to) other-country product versions. As long as prices do not offset the consumer valuation differences between versions, consumers would likely prefer and purchase the product version offered in their own country. In this case, DC-SIP increases consumer welfare.

(3) If companies offer different product versions, and consumers perceive the version offered in their own country as being of lower value, then the potential negative effect will depend on the price at which it is offered. If the alternative product version from the other country can only be offered at a price that is higher than the additional valuation of the own-country version, then DC-SIP is still welfare-enhancing. This is situation 3A shown in Figure 4, where DC-SIP affects consumer welfare positively, even if the product version offered in a country is perceived as being of lower quality than the product version offered in a different country.

(4) However, when the price of the alternative product version is lower than, equal to or not sufficiently higher than the price of the own-country version, such that it does not offset the additional valuation of the other-country

version, then the consumer surplus derived from the own-country version is lower than it would be if they were offered the alternative product version. It is in this setting that DC-SIP negatively affects consumer welfare and purchasing decisions.

(5) Yet, consumer quality perception formation is a complex process, and consumers' perceptions and preferences likely differ both *between* and *within* countries. Individual consumers may have different quality perceptions and valuations of different product versions, and may have a different taste for quality in general. Consumers in different countries, as well as different consumers in the same countries, might therefore find themselves in different situations, and may be affected differently by DC-SIP.

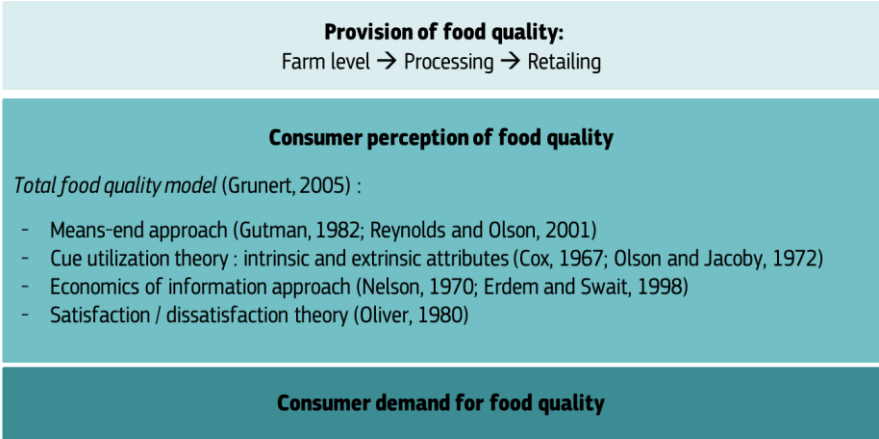
The assessment of the impact of DC-SIP on consumer welfare is thus dependent on consumers' perception of product versions being different, and on their subjective valuation of different product versions. The next section therefore explores the different factors that shed light on the formation of food quality perceptions, and how they may differ between countries and between individual consumers. It draws from consumer psychology, the economics of information, marketing, and other interfacing fields.

2.2 Food quality perception and purchasing intentions

In order to understand how the different compositions and characteristics of different product versions may affect consumer welfare, we build on the Total Food Quality Model proposed by Grunert (2005). It starts from Lancaster's (1966) idea that consumers do not derive utility from goods themselves, but instead from the set of characteristics they possess. This means that each product needs to be seen as a combination of characteristics, which will constitute its quality. Hence, quality is a multi-dimensional concept. Building on this, the means-end approach to consumer behaviour (Gutman, 1982; Reynolds and Olson, 2001) considers that a product is attractive to a consumer when their perception of the product's characteristics along a set of quality dimensions is considered a means to achieve functional benefits, psychological benefits and ultimately, value for the consumer. Indeed, when consumers are asked about what they regard as food products of good quality, answers are always around the concepts of taste, health, convenience, and (for some consumers) process characteristics (e.g. organic, animal welfare, GMO) and their own human values (Grunert, 2005).

Within this framework, two areas matter for the focus of this report. The first area is already covered by the framework proposed by Grunert (2005), and relates to extrinsic food quality attributes⁹ such as brands, geographic origin, labels, packaging and prices. The second area can be covered in an extended framework, and relates to disconfirmation of expectations due to information deficiency, perceptions of deception and unfair treatment by the brand providers. The overall framework is covered next, and the two areas that matter for DC-SIP are covered in greater detail in Chapters 0 and 0.

Figure 7. Relevant streams of research related to food quality and the total food quality model



Source: based on Grunert (2005)

⁹ Extrinsic quality attributes refer to non-physical characteristics/aspects related to a product, as opposed to intrinsic attributes which refer to physical characteristics of a product.

When consumers evaluate a product, they use an array of available signals or cues of a product to create a perception of each of these concepts that are relevant in their decision-making, and make a judgement on the product (Cox, 1962). Depending on how costly it is for consumers to obtain information about the quality of a product or attribute, information economics classifies them into search, experience or credence goods (Darby and Karni, 1973; Nelson, 1970). Search attributes are easily observable prior to consumption, but food is mostly characterised by experience or credence attributes. Experience attributes can be assessed only after experiencing, i.e. preparing and consuming the product, and credence qualities are difficult or impossible to observe even after consumption (e.g., food safety, organic, GMO, respect for animal welfare in the production process). For example, the belief by many consumers that similarly packaged, branded products offered in different country-markets are equal can be considered a credence attribute. As a result, understanding how consumers derive a quality perception based on the signals and cues they have available, is especially important for food.

The Total Food Quality model identifies a vertical and horizontal dimension in the process of food quality perception, as illustrated in Figure 8. The vertical dimension describes how consumers make inferences based on a variety of signals or cues, and how a consumer finds out the desirable properties by linking them to the motivators for human behaviour. In the context of DC-SIP, this framework will help us to understand how far the intrinsic differences in product composition are perceived and taken into account in the context of almost identical extrinsic cues such as brand name and packaging. The horizontal dimension is the time dimension, distinguishing quality perception before and after purchase, and thus distinguishing the perception and evaluation process of a first purchase from that of future purchases. In the context of DC-SIP, this refers to the question of whether or not consumers realise that they are being offered a different product, either after consuming it themselves, or after having been exposed to additional information, e.g. through the media, on different versions being offered in different MS.

The vertical dimension of food quality perception

Product cues can be intrinsic or extrinsic. *Intrinsic* cues refer to the physical properties of the product, such as ingredients, which cannot be manipulated without also altering the physical properties of the product. *Extrinsic* cues refer to everything else, such as price, brand name, packaging, store image, and advertising, which are not part of the physical product (Olson and Jacoby, 1972).

Consumers infer quality from characteristics of the product and other information they have at hand, but usually not all potential cues are used to infer quality. Not all cues might be perceived by consumers as providing useful information, and there is an information-processing stage involving the selective perception and processing of cues (Steenkamp, 1990). According to cue utilisation theory, the extent to which each cue relates to final quality perception varies according to the signal used and the product in question, but is also heterogeneous across consumers (Cox, 1962). Only those cues are used (i) that consumers believe to be predictive of the quality they want to evaluate; and (ii) that they feel confident in using (Cox, 1962; Olson and Jacoby, 1972). The concept of confidence in inference-making is strongly linked to the consumer's knowledge and expertise (Selnes and Troye, 1989).

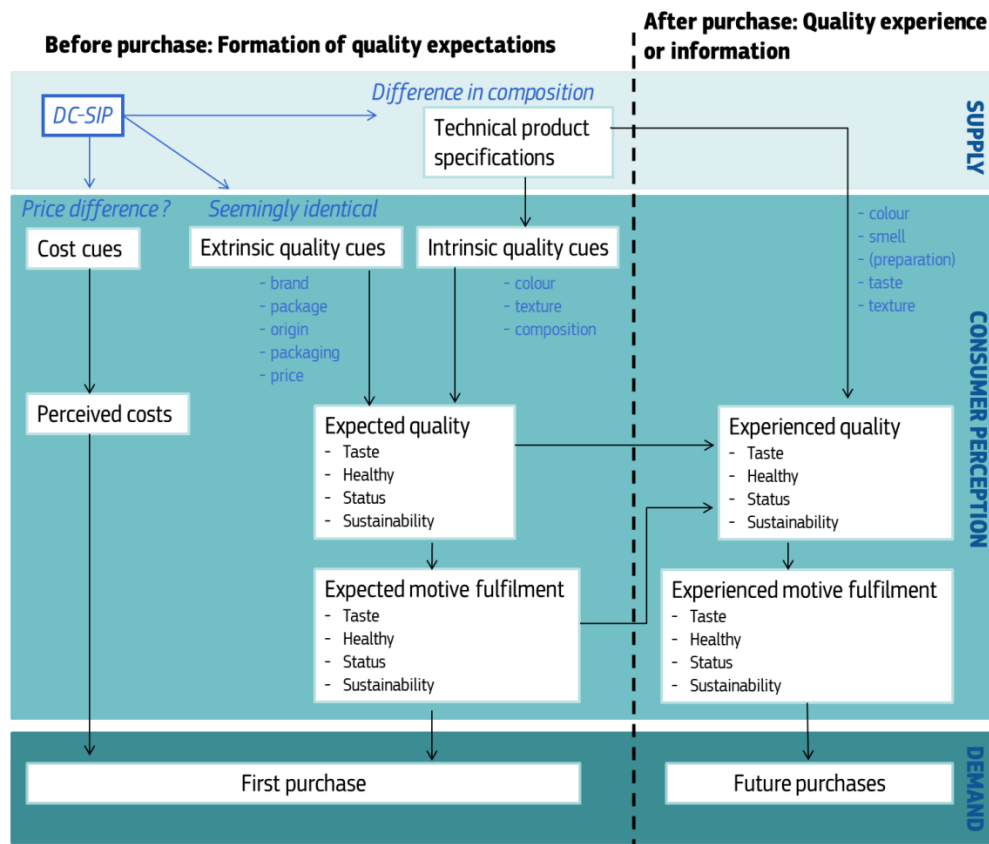
The definition of DC-SIP essentially refers to products that are different in their intrinsic characteristics, while their extrinsic characteristics are the same, or largely the same (particularly the brand). Overall, intrinsic cues (e.g. physical product differences such as taste) are found to have stronger effects upon quality perceptions than extrinsic cues (e.g., price, store image, brand name). However, when the predictive value of intrinsic cues is low, when consumers do not have confidence in intrinsic cues or in their own ability to interpret them, or when intrinsic cues are hard to assess because of time constraints, extrinsic cues become more important in the quality judgement process (Olson and Jacoby, 1972).

Moreover, consumers are confronted with a large amount of information and have limited time when making purchasing decisions. As a result, consumers mostly rely on just a few key cues that are easy to assess, from which they form a perception of the overall quality of the product (Selnes, 1993). In that sense, visual cues such as brands and packaging may play a stronger role than for example back package labels, even though the latter likely provide more and more accurate information on the actual composition of the product.

Therefore, consumer information deficiency regarding food composition is more likely to occur in cases where consumers have a low tendency to use intrinsic cues and rely instead on easily observable extrinsic cues which generate confidence, such as packaging and brands. This results in different product versions being perceived as

identical. The role of these extrinsic quality cues (brands, geographic origin, packaging and prices) in the existing framework of quality perception formation is explained in Chapter 0.

Figure 8. Quality perceptions, experience and purchasing decision in the case of DC-SIP



Source: authors, based on Grunert (2005)

The horizontal dimension of food quality perception

In reality, many food purchases are part of a series of repeated purchases. The most important assessment is then made before the first purchase (the trial purchase), in which expectations are based on informational cues only. Based on this *expected* quality perception and the related *expected* motive fulfilment, a first purchasing decision is made. If all product information can be perfectly and easily observed before purchase, these expectations correspond to reality, and there would be no reason for future purchases to be different. Yet, in most cases, and especially for food, many of the relevant quality attributes are not observable. Expectations of taste, for example, will be based on intrinsic and extrinsic cues, and can only be confronted with experienced taste after purchase. Consumers' experience of products is not independent from his or her previously formed expectations based on extrinsic cues¹⁰, but now the intrinsic, physical product characteristics are directly experienced too. The expectations formed of the quality of the food product based on cues can now be confirmed or disconfirmed, and will determine consumer satisfaction and the consumer's intention to repurchase the product, or not to (Oliver, 1980).

Credence qualities, e.g. related to health or organic production processes, cannot be verified after purchase, and will still rely on inferences made from cues. Credence qualities might be revealed at any stage of the purchase choice process (e.g. through media, from other consumers), which might confirm or disconfirm quality perceptions, and will determine consumer satisfaction and consumers' repurchasing decisions. Also the idea that similarly packaged branded products are exactly the same across European countries can be considered a credence quality. It essentially refers to a situation of information deficiency: whether the composition of product versions in

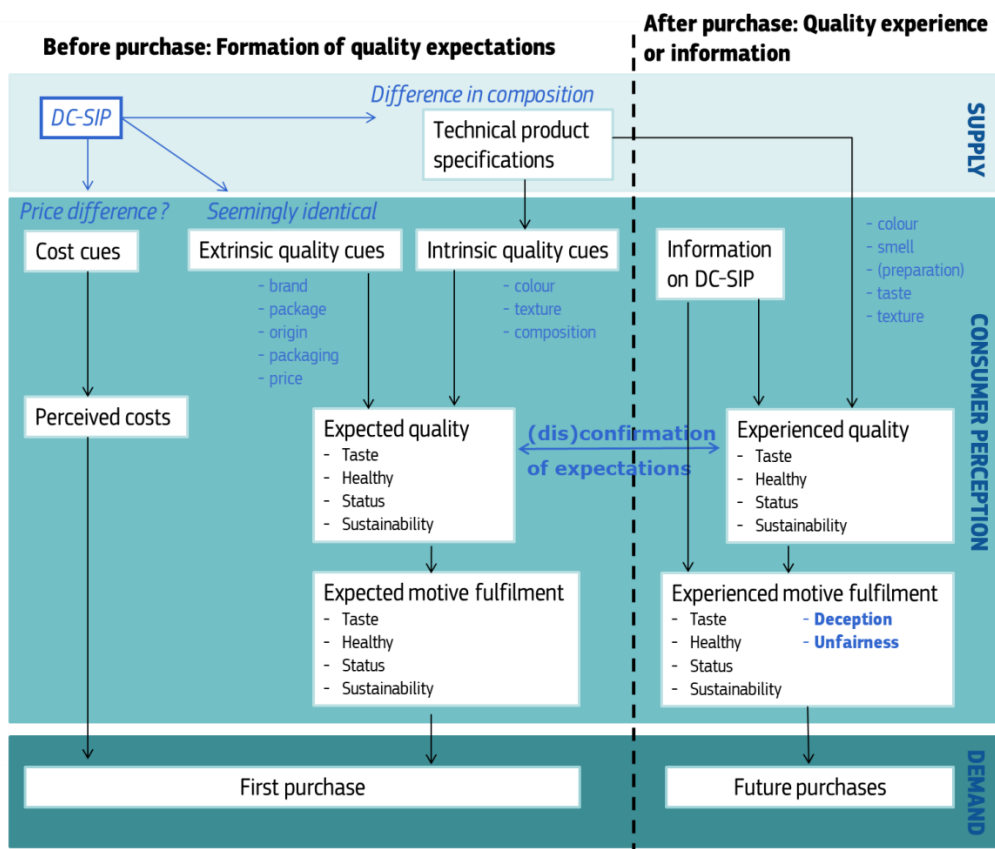
¹⁰ For example, the presence of an organic label or a high price is found to affect taste ratings (Lee *et al.* 2013; Almenberg and Dreber, 2011).

different country-market is exactly the same is not easily detectable if each version is only offered in one of the markets, and products cannot physically be easily compared one to another.

2.3 Information deficiency, deception and fairness perception

The Total Food Quality model is extended to explicitly include the factors of disconfirmation of expectations due to information deficiency, and perceptions of deception and unfair treatment by brand owners (Figure 9). Disconfirmation of expectations can arise when there is information asymmetry (deficiency) on the part of consumers, who are not informed a priori about differences in the food composition of branded products compared to other country-markets. Should they become exposed to information post-hoc, either by realising themselves or through (social) media or word-of-mouth, this may trigger feelings of deception and unfair treatment by brand owners, and may result in consumer dissatisfaction and influence their purchasing decisions, either temporarily or in the longer term. This is discussed in detail in Chapter 0 of the report.

Figure 9. Quality perceptions, experience and purchasing decision in the case of DC-SIP



Source: authors, based on Grunert (2005)

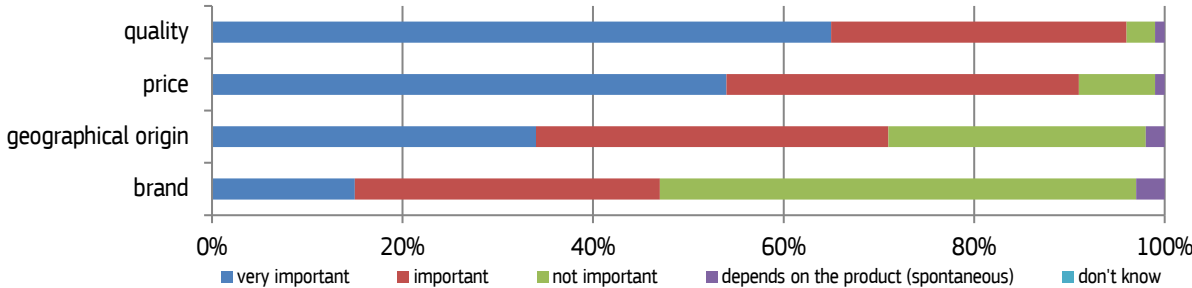
3 Factors shaping consumer perception: intrinsic and extrinsic product quality cues

Even in a simplified model, the complex process of quality perception formation and heterogeneous consumer preferences can generate a variety of possible outcomes. The following subsections of this section discuss the empirical literature on the intrinsic and extrinsic cues used by consumers to infer the quality of the food they purchase, focusing on those cues that are related to the issue of DC-SIP. Where relevant, the literature is complemented by relevant observations from a focus group exercise that was performed in Spain, Romania, Hungary, Sweden, Germany and Lithuania, as a part of the same project on DC-SIP, which is reported in detail in Di Marcantonio *et al.* (2020).

3.1 The importance of food quality

There is abundant support for the fact that consumers emphatically state that they care about food quality, and in the focus group discussions there was also broad agreement on the importance of food quality in purchasing decisions (Di Marcantonio *et al.*, 2020). When European consumers are asked about what their food purchasing decisions, quality stands out as the most important attribute across all European consumers, before price, geographic origin and brand (Figure 10, Figure 11)¹¹. 65% of European consumers state that food quality is very important, and 31% that it is important. In only 6 out of 27 countries¹² did price have priority over quality, though with a small difference. Geographic origin and brand are also important, and in further discussion it will be shown that the more uncertainty there is over the quality of food, the more important these become, as they act as an indicator of food quality.

Figure 10. What is important in making food purchasing decisions?¹³



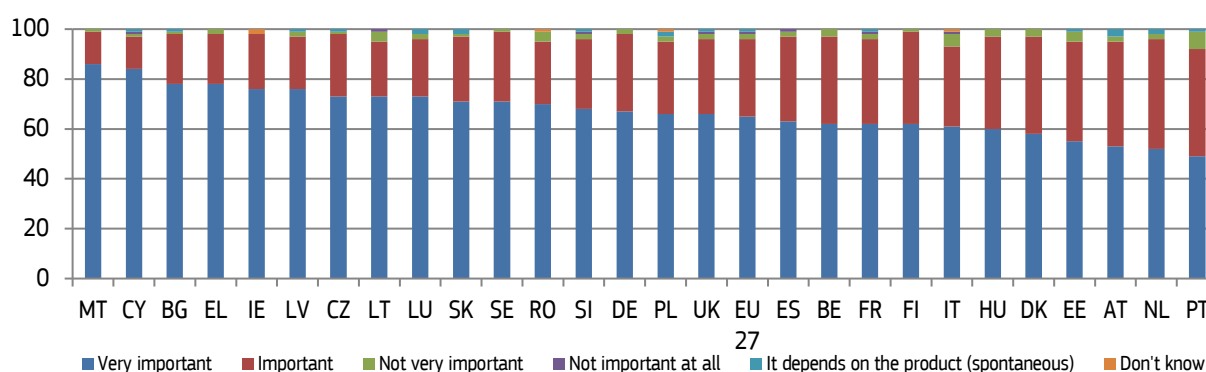
Question: "When buying food, how important are the following for you personally ... ?"
 Source: European Commission(2012), Special Eurobarometer.

¹¹Moreover, as already indicated above and as will be explored in further detail below, the importance that consumers attach to price, geographic origin and brand cannot be seen as independent from food quality, as these other factors are used – at least partially – as indicators of food quality.

¹²Croatia joined the EU on 1 July 2013, after the implementation of the Eurobarometer survey.

¹³The survey question asked was: "When buying food, how important are the following for you personally...? - Quality, - Price, - Where the food comes from (geographic origin), - Brand". Optional answers are "Very important", "Fairly important", "Not very important", "Not at all important", "Don't know". A number of respondents spontaneously answered "Depends on product".

Figure 11. Importance of quality in making food purchasing decisions



Source: European Commission (2012), Special Eurobarometer

The next aim of the analysis is to understand what consumers' perception of food quality is based on.

3.2 Intrinsic product quality attributes

Most quality dimensions that consumers report caring about (e.g. taste, smell, healthiness), relate directly to the underlying physical characteristics of food products. During the focus group discussions, the majority of consumers reported that they considered a product to be of good quality when it has good ingredients, tastes good and has a good appearance. In Sweden, environmental friendliness is also considered a part of food quality (Di Marcantonio *et al.*, 2020). Yet these intrinsic attributes most likely cannot be directly observed before purchase as many branded packaged products use non-transparent packaging, and products cannot be tasted at the time of purchase.

The composition of the food product is available on the back of the package in ingredient lists and nutritional values¹⁴. But it is not clear whether the average consumer (1) takes the time to check this information, and (2) is able to derive the relevant quality dimensions from these lists. Studies on the use of nutritional information suggest that not all consumers tend to actually use this information. In a study carried out across 38 European countries, 18% of consumers claimed to 'always' check the nutritional information (ACNielsen (2005), reported in Grunert and Wills (2007)). However, actual observation of shopping behaviour suggest that such self-reported measures tend to produce large overestimates, and that the true number of consumers who actually check the information may be only half of that (Grunert *et al.*, 2010). The focus group exercise confirms that back-of-package information and labels is not commonly checked, although recently more attention may be paid due to increased health or environmental concerns. Consumers may look for specific ingredients that they consider unhealthy, environmentally harmful, or for the presence of allergens (Di Marcantonio *et al.*, 2020). Some Romanian and Lithuanian consumers also recognised a lack of knowledge about some of the information included on the package. Grunert *et al.* (2010) studied ability to use the nutritional information to derive correct health inferences, and suggests that 70-90% of shoppers are able to do so. Finally, many other relevant intrinsic quality attributes, such as smell, taste, and details on the origin or specifics of the ingredients, cannot be derived from back-of-package information.

The different composition of DC-SIP will in most cases translate into differences in back-of-package information. As such, consumers can check the composition and characteristics they are being offered. However, this does not directly inform them as to whether the reported composition is different from product versions offered elsewhere. As a result, most consumers cannot compare ingredients lists and nutritional composition between local products versions and those offered in other Member States, and they become subject to information asymmetry, specifically deficiency regarding such compositional differences. Furthermore, the product versions may also differ in the quality of ingredients used to produce them. Even where the ingredients are chemically the same and the

¹⁴While ingredients list and nutritional scores are not intrinsic cues in the strict sense of the term, they are discussed here, as legal requirements oblige them to be exact representations of the actual objective composition of the product. As such, they provide correct (even if not always fully detailed) information on the intrinsic product characteristics.

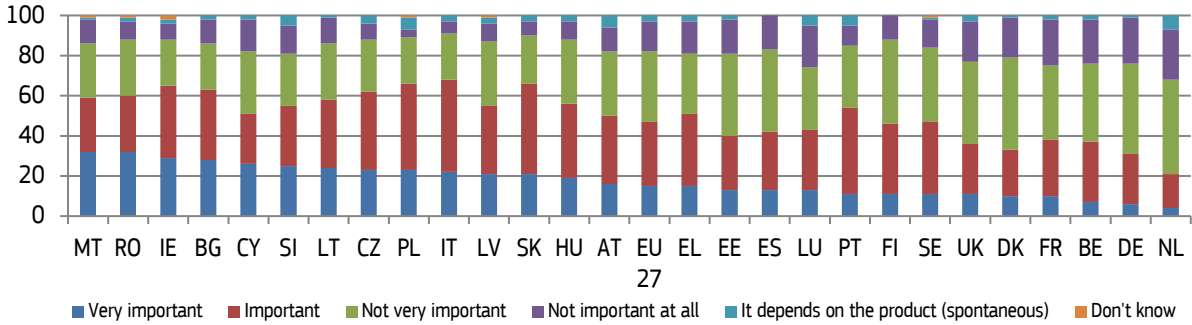
back-of-package information is the same, consumers may care about additional factors, such as the origin of the meat, the type of vegetable oil being used, or the quality of the ingredients (Di Marcantonio *et al.*, 2020). Thus, even if consumers were informed about the different composition of product versions, and even if there were no differences in the back-of-package information between product versions, consumers might be subject to information asymmetry.

3.3 Extrinsic product quality attributes

Brands and product food quality perceptions

A brand is understood as “a name, term, sign, symbol, or design, or a combination of them, [that] is intended to identify the goods and services of one seller or a group of sellers and to differentiate them from those of competitors” (Kotler, 1997). When asked about the importance of brands when buying food, on average 47% of EU respondents answered 'very important' or 'important' (Figure 10). Brands are most important in Italy (68%). All new Member States have reported percentages that are well above the EU average, ranging from 55% to 66% (except for Estonia with 42%). In the EU15, the average share of respondents indicating brands as important is 43%, with the Netherlands having the lowest share (Figure 12).

Figure 12. Importance of brands in making food purchasing decisions



Source: European Commission (2012), Special Eurobarometer

There are two main explanations for the role of brands in the quality perception process. The first relates to information economics and states that brands acts as a signal that reduces information asymmetries and uncertainty. Brands communicate the quality positioning of the product to consumers, simplifying the search process and reducing consumers’ search costs (Erdem and Swait, 1998). The second relates to the associative network model (Aaker, 1991; Keller, 1993), which explains the preference for branded products by their associations, what image perception it represents to consumers (i.e. prestige, wealth status, uniqueness, modernity, or “globality”). Focus group discussions confirmed especially the first explanation, reporting that brands are seen as synonymous with guaranteed quality, reliability and trust, particularly when it concerns well-established branded products that have been consumed for a long time (Di Marcantonio *et al.*, 2020).

Several empirical studies show that brands strongly influence product evaluations and purchasing decisions. Experimental studies on quality perception of beers (Jacoby *et al.*, 1971) show that brand names may exaggerate the judgement based on compositional differences only (i.e. increase the perception of quality of an 'objectively' higher and decrease it for the lower quality product). The less familiar a person is with a food category, or the larger the perceived heterogeneity in quality in a product class, the more likely it is that the brand name will be used to infer taste qualities (van Ittersum *et al.*, 2003). Psychological brand associations also play a large role in consumer decision-making in societies where group identity is more important (because brands reinforce group identity), or in societies with larger social inequality (because brands signal wealth or prestige). Indeed, some studies have found that in collectivist societies, brands which reinforce group membership are seen as more attractive and more loyal to the dominant group. Also, cultures which tend to emphasise differences between social and economic classes are argued to attach more importance to product brand names (Erdem *et al.*, 2006; Roth, 1995). Finally, people’s valuation of brands does not necessarily translate into purchasing intentions. For

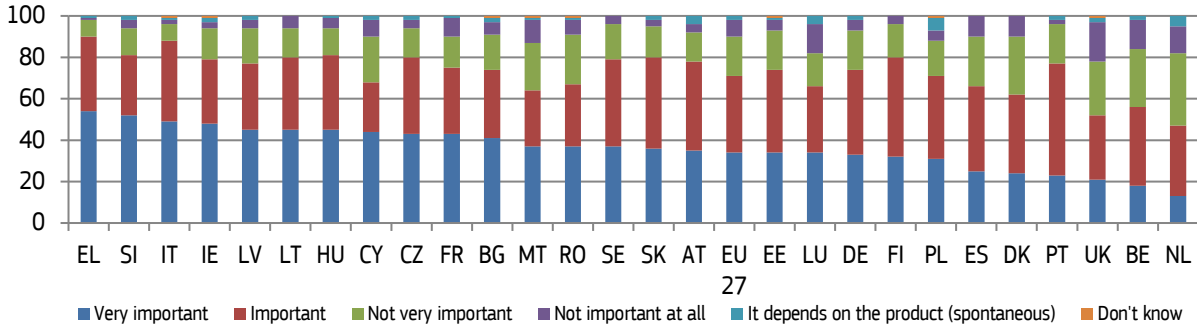
people in wealthier countries or in wealthier segments of society, it may be easier to afford higher quality brands which are generally also more expensive, than for less wealthy consumers (Keller *et al.*, 2008).

The market comprises both manufacturer and retailer brands¹⁵. Retailer brands do, in principle, affect consumer decisions as much as manufacturer brands (Laaksonen and Reynolds, 1994). Early studies suggested that consumers tended to perceive retail brands as being of lower quality than national brands, which may follow from the historic association of retailer brands with generic products, inexpensive-looking packaging and low-cost alternatives (Richardson *et al.*, 1994). Over time, retail brands have increased their attention to packaging and brand image, and the price premium that consumers are willing to pay for a manufacturer brand versus a retailer brand has been declining in most developed countries (Richardson *et al.*, 1994; Steenkamp *et al.*, 2010). As such, the implications of brand image likely hold for both manufacturer and retailer brands, and several retailers do operate on a cross-country basis.

Geographic origin, 'globality' and country destination

Geographic origin information also plays an important role in purchasing decisions for most (on average 71%) European consumers (European Commission, 2012). For most countries, the percentage varies between 62 and 81%, although for Greece and Italy this is 90 and 88% respectively, while in Belgium, the UK and the Netherlands, it is considerably less important (Figure 13).

Figure 13. Importance of geographic origin in making food purchasing decisions



Source: European Commission (2012), Special Eurobarometer

Such geographic origin refers to the country (or region) in which a product was produced, and the associations consumers hold about that country (Wilcox, 2015). Such information may affect purchasing decisions via two mechanisms: (1) consumers may have a direct preference for products produced in a certain country, and (2) geographic origin information may act as a 'halo', which generates a bias, positive or negative, in consumers' beliefs about other aspects of the product. For example, such information may act as a quality cue when the country is associated with a higher standard of production, better know-how, a long tradition in certain food items, or more quality-conscious consumers (Van Der Lans *et al.*, 2001; van Ittersum *et al.*, 2003). Individuals' affinity to a country also plays a role (Oberecker and Diamantopoulos, 2011). Schooler (1965) was the first to describe the country of origin bias, and since then a very large number of empirical studies have been published on the topic (Papadopoulos and Heslop, 2002; Verlegh and Steenkamp, 1999) confirming its importance.

In the absence of strong brands, the country of origin is found to play an important role in consumers' quality assessments (Ettenson, 1993; Ozretic-Dosen *et al.*, 2007). Webb and Po (2000) argue that with increasing globalisation and growing complexity of products, consumers rely increasingly on country of origin and brand information, as a means of simplifying information processing.

¹⁵ Manufacturer brands are also referred to as national brands since they tend to be distributed nationally (or internationally), in contrast to local brands, which are distributed in a smaller geographical area. Retailer brands are often referred to as private-label brands, own labels or store brands, since they carry the brand of the retailer rather than the producer. This report opts for the terms manufacturer and retailer brands as they are perceived to be less confusing.

The geographic origin construct also relates more generally to the distinction between local and non-local products, domestic and foreign products, and to the concept of 'globality' or 'globalness' (Thakor and Lavack, 2003).

In developed economies, consumers often tend to prefer domestic products (referred to as 'consumer ethnocentrism') either out of pride in domestic products, out of the belief that buying foreign products would damage the domestic economy (Balabanis *et al.*, 2001), or due to perceived higher quality of local products (Arsil *et al.*, 2018; Naspetti and Bodini, 2008). Focus groups in the higher-income Member States (Sweden and Germany) confirm this trust in local products (Di Marcantonio *et al.*, 2020). To the contrary, in less developed or transition countries, consumers are often found to prefer nonlocal or foreign products, and to have a strong preference for global brands. Consumers often associate global products with modernity and progress, quality and reliability, aspirations, social responsibility, or status and prestige (Batra *et al.*, 2000; Dimofte *et al.*, 2008; Han, 1989; Özsomer and Altaras, 2008; Steenkamp *et al.*, 2003). Indeed, consumers participating in the focus group discussions conducted by Di Marcantonio *et al.* (2020) report that they expect multinational brands to automatically meet quality standards, and expect multinational companies to be transparent and ethical. 'Global' brands may derive a substantial proportion of their equity from their country of origin (Pappu *et al.*, 2006; Roth *et al.*, 2008), and in addition, they may be valued for assumed uniformity and standardisation of product's physical characteristics and composition, without particular adaptation to local markets (Özsomer, 2012).

Batra *et al.* (2000) show the preference for global brands to be stronger for consumers with a greater admiration for Western lifestyles, for consumers who are more susceptible to normative influence, and for product categories with a high social signalling value. Klein *et al.* (2006) find that in Russia and China, domestic goods are perceived to be of lower quality than products produced in specific foreign countries. Ozretic-Dosen *et al.* (2007) found that young Croatian consumers rank chocolate from Western European countries as better than domestic chocolate, which in turn is ranked better than products from other Central and Eastern European countries. Ettenson (1993) found that – at the time of the study – Russian, Polish and Hungarian consumers perceived non-food products from Western countries as better, and products from other Eastern countries as worse than domestic ones. Related to this is the practice by some emerging country companies of using foreign brand names to suggest the product being made in a different country than it actually is. A foreign brand name can be used to create an "implied country of origin" effect (Agrawal and Kamakura, 1999; Verlegh and Steenkamp, 1999). Melnyk *et al.* (2012) show that incongruence between actual and implied country of origin leads to a larger decrease in purchase likelihood if the actual country of origin is an emerging country rather than a developed country. Not, however, that consumer attitudes are constantly changing, and given that several of these studies date back one or two decades, today's perception towards domestic versus foreign products may be considerably different. Indeed, the focus group discussions held by Di Marcantonio *et al.* (2020) suggest that today, the quality of locally products is widely acknowledged in Eastern European countries too.

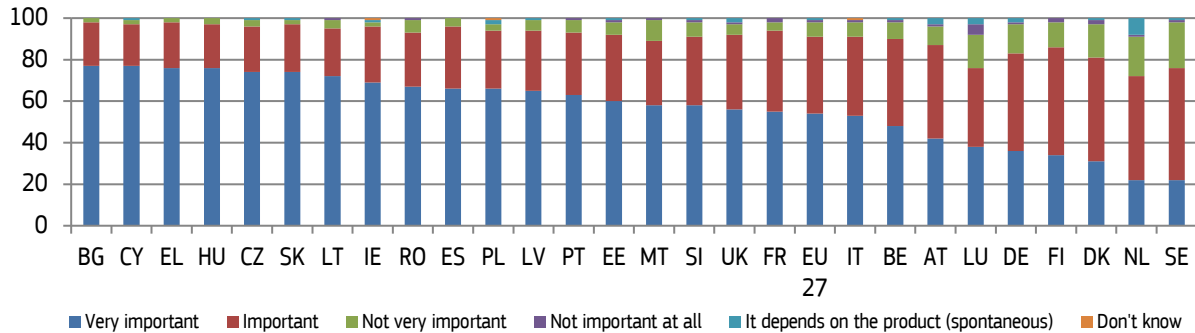
Consumers' reaction to DC-SIP issues may also be linked to psychological distance they perceive between their own country and other country-markets. 'Psychological distance' is defined as consumers' subjectively perceived distance from a given foreign country. The psychological distance from a specific foreign country is a reflection of the perceivers' knowledge, familiarity and sense of understanding of it (Dow and Karunaratna, 2006). Kogut and Singh (1988) proposed an index of psychological distance for each country-market combination.

Related to the concept of geographic origin, information on the 'destination country-market' that a branded packaged product is associated with may also influence quality perception. Consumers may have associations linked to a products' destination country-market, similar to the association they have with its geographic origin, or the origin associated with the brand. Knowing that a certain packaged branded product is sold in a specific country-market, consumers may assume the product to be tailored to the preferences and quality standards of consumers in those country-markets, and in this way it functions as another quality cue. This is relevant with respect to the case of DC-SIP, where – once a consumer is aware of product versions being different across countries – information on the market in which each version is sold, may be used as an indication of quality, and as such, influence consumer evaluations of the packaged branded product. For example, consumers from New Member States expressed that they believe products offered on the German market to be of higher quality, because of the higher income level and to be adjusted to the typical high environmental and health concern of German consumers (Di Marcantonio *et al.*, 2020). If this is the case, then information on the destination country-market can be used as a quality cue and can generate quality expectations. Nonetheless, as such information may not be readily available, only consumers living in close geographical proximity to country borders, those travelling frequently and being multilingual may be able to realise such differences if any.

Prices

Price is another important factor in consumer purchasing decisions. About 90% of European consumers find price important when buying food, while 45% find it very important. Unsurprisingly, this share is higher among those consumers who are having difficulties paying bills, and it is slightly higher among new versus old Member States (European Commission, 2012).

Figure 14. Importance of price in making food purchasing decisions



Source: European Commission (2012), Special Eurobarometer

Despite a higher price negatively affecting purchase probabilities, many consumers perceive price in a broader sense and often use it as a quality cue (Erickson *et al.*, 1984). When a product has a higher price than alternative products, many consumers see this as a signal of quality (Scitovsky, 1976), which has generated quite some experimental interest (Rao and Monroe, 1989; Völckner and Hofmann, 2007). Empirical studies showed that the higher the uncertainty over the other potential quality cues, and the less familiar consumers are with the product, the more important becomes price in consumers' formation of perceived quality (Jacoby *et al.*, 1971; Monroe, 1976). The more important role of price as a quality cue, the lower price elasticity will be (which may even become positive), and the more manufacturers will be incentivised to put a higher price on the product (Jacoby *et al.*, 1971).

Packaging

Given that the majority of food products are packaged, this means that the package forms the first visual presentation of a product to consumers. Visual package cues do become key prompts that enable consumers to evaluate competing manufacturers' branded and retailer branded products (Silayoi and Speece, 2004). Connolly and Davidson (1996) suggest that 73% of purchasing decisions may be made at the point of sale. When evaluating competing product alternatives, consumers may primarily lean on extrinsic cues (Richardson *et al.*, 1994) and thus simultaneously draw upon both packaging cues, and on access to information. The package carries information on the brand through its logo and colours, on nutritional content and possibly on the geographic origin of the product, environmental, fair trade or quality labels, which are all argued to play a crucial role. Additionally, it may carry information on promotions and on the price of a product. Besides carrying information, the package's visual appearance and the material used also influences consumers' expectations, and their willingness to purchase the product (Piqueras-Fiszman and Spence, 2015; Prendergast and Pitt, 1996). First, the visual aspects of the package provide signals on the quality of the product. Visual cues tend to attract consumers' attention more easily and generate expectations more quickly than reading a text (Underwood and Klein, 2002). Second, the package plays an important role in attracting consumers' attention, and in product recognition for repurchasing decisions (Silayoi and Speece, 2004). However, how the visual stimuli are combined on the packaging may lead to substantial consumer errors of judgement. (Zhu *et al.*, 2019).

Product category

The importance of product category for the formation of perceived product quality is well documented. Fader and Lodish (1990) found substantial differences across product categories due to category penetration in households, unequal category-level advertising spending, varying consumer involvement (Steenkamp *et al.*, 2010), dissimilar dominant product designs (Utterback, 1994), uneven brand commoditisation (Steiner, 1993) and dissimilar

consumer variety-seeking (Van Trijp *et al.*, 1996). These generate both divergent consumer product-category-based relationships, and dissimilar consumer decisions in store (Inman *et al.*, 2009). Product category aspects are also linked to frequency and quantity of products purchased, leading to unequal consumer familiarity and brand affiliation/loyalty (Koschate-Fischer *et al.*, 2014), dissimilar brand relationships (Fetscherin and Heinrich, 2015), and, very likely, unequal food composition knowledge across food product categories. These do therefore imply dissimilar consumer interest across categories and uneven probability of detection and reaction in cases of DC-SIP, as well as dissimilar relationships between consumers and brands. In line with this, Van Ittersum *et al.* (2003) recount how the more unfamiliar consumers are with a food category, the more likely it is that they will use a brand name or perhaps a region of origin to infer favourable taste qualities that may not actually exist. In contrast, the more familiar they are with a wide range of brands within a category, the less difference a “big name” will make in their sensory evaluations (in the absence of quality differences).

3.4 Summary: DC-SIP and consumer quality perception formation

The literature shows that consumers’ product quality perception is often based on extrinsic quality cues (e.g. brand, place of origin, packaging), which may result in potential intrinsic differences in composition between product versions going unnoticed. The more difficult it is to assess intrinsic product attributes, and the stronger the role of specific extrinsic quality cues, the more likely these extrinsic cues are to guide consumer purchasing decision, with possible intrinsic differences going unnoticed. Especially when it comes to frequently bought products, consumer purchasing decisions will be guided by habit formation and decision rules, which are often linked to these extrinsic cues.

This means that while most of the intrinsic differences between DC-SIP versions offered in different countries might be presented in ingredients list, strong extrinsic cues including similar packaging, (global) brands and price might take the lead in consumer quality formation before purchase. The differences between DC-SIP versions might be noticed by consumers (and affect their purchasing choices) only in situations when the intrinsic differences are significant, are important cues for signalling quality, and/or if they are relatively easily detectable.

Expectation formation based on those extrinsic cues will vary a lot across countries, but also between individual consumers. There is evidence that less developed or emerging countries give more importance to extrinsic cues for quality perception formation such as brand and place of origin, and are often accompanied by a higher level of economic inequality, which may further increase the importance of brands as signalling prestige. In particular, expectations around *global* brands are likely different from those in richer countries. Differences in intrinsic characteristics might therefore be expected less likely to be detected and influence consumers’ purchasing choices in these countries.¹⁶

Even if differences in intrinsic characteristics are noted upon comparing the two product versions, the likelihood of DC-SIP being detected might be low in many cases, because it is not possible to compare with a product version from a different place. Only people travelling often or living close to a border may be able to detect DC-SIP. The main concern regarding DC-SIP therefore derives from information asymmetries, and consumer deficiency in this respect.

When DC-SIP is noticed or people are able to taste/experience the difference, the impact on consumer decisions can be expected to be highly heterogeneous. The degree to which this information asymmetry/deficiency determines the Impacts of DC-SIP depends on the formation of perceptions and expectations, as well as on individual preferences. The multitude of combinations and contexts described above regarding both intrinsic and extrinsic food product cues, consumer relationships with brands in dissimilar product categories, the time-constrained setting in which consumers tend to make purchasing decisions, the varying consumer relationships to different countries-of-origin or globality cues and the information deficiency regarding product versions available in other country-markets predict a very substantial heterogeneity in consumers’ product quality assessment. Overall, heterogeneity is such that one should not rationally expect quality perception and preference for the different quality dimensions to be homogeneous across all products, shopping contexts or countries. Individual

¹⁶ But the high expectations linked to (global) brands might also lead to stronger disconfirmation of expected brand value in less developed countries when DC-SIP is revealed to consumers, and lead to higher perception of deception and unfairness in these countries (this issue is discussed in more detail in next chapter).

consumers themselves may also act in different ways as time passes by.¹⁷ As a result, whether or not consumers perceive two product versions as different, whether differences are considered significant, and which of the preferences is preferred is expected to be heterogeneous between countries, between consumers within the same country, between products, and may even depend on the context and situation in which a consumer finds himself at a particular point in time.

Seen from a consumer psychology, marketing and interfacing fields' point of view, the impact of DC-SIP on consumer purchasing decision-making is therefore not straightforward to associate with specific individuals and contexts *a priori*, and the literature does not appear to suggest the existence of overall typical patterns.

Aside from the question of whether different product versions would be perceived and valued differently, DC-SIP itself may generate consumer reactions. In cases where consumers are aware of DC-SIP, information asymmetry (specifically deficiency), realisation of differences which are deemed unacceptable, perceptions of deception and unfair treatment by brand owners and purchases may be present. When this reaches a 'critical threshold' and become substantive enough, this could potentially trigger a DC-SIP-related consumer reaction. These issues are explained in the next section.

¹⁷ Should the link be made with the random utility maximisation literature (Baltas and Doyle, 2001) heuristics/biases work (i.e. Tversky and Kahneman, 1974), and potential alternative decision rules (Chorus, 2012), as well as consumer judgement accuracy based on the combination of visual stimuli on the packaging per se (Zhu et al., 2019), then the emerging picture, *in a summarised form*, is one whereby the taste for quality θ_i and perception of the quality of product version $f_i(q_j)$ are substantially divergent across several aspects including (a) variations in shopping contexts, (b) consumer product quality attributions to each individual product and product category in their shopping basket with such attributions relating to the intrinsic and extrinsic product cues at work, (c) interpersonal heterogeneity, (d) intrapersonal dynamics, (e) heuristics/biases, decision rules at work and consumer judgement errors.

4 Disconfirmation, perceived deception and unfairness, and repurchasing decisions

4.1 DC-SIP as disconfirmation of expected utility

The previous chapter showed that consumers' food quality perception is a complex process and that it is often based on extrinsic quality cues, which may result in potential intrinsic differences in composition between product versions going unnoticed. Moreover, in many cases consumers do not have the opportunity to compare product versions from different countries. Therefore, the concern regarding DC-SIP derives from information asymmetries. If consumers were fully informed regarding product versions available in different countries not being equal, consumers' expectations would be adjusted before purchase. Thus, the information deficiency around DC-SIP relates to a gap between expected and actual composition of food items. Consumer response is expected to occur if DC-SIP leads to dissatisfaction, resulting from the disconfirmation of expected value of branded products, or from perceived unfair treatment.

Earlier, we discussed how the important role of extrinsic characteristics in food product evaluation may result in differences in intrinsic product characteristics – such as the composition or quality of ingredients used – going unnoticed. In addition, given the multitude of food products in the food basket, the amount of time and information processing ability consumers may use for the purpose, the size and type of compositional differences, and the absence of alternative product versions in the market, make direct comparison(s) almost impossible.

In most situations, consumers would expect and believe that the branded product they buy in one Member State is the same as the one they would buy in another Member State. Most consumers would not have the opportunity to verify whether this is true, so it can be considered a credence attribute of the product. This means that, unless information about different versions being offered in different Member States is explicitly and clearly communicated to consumers, the existence of different versions is neither suspected nor detected, and purchasing decisions will not be affected.

An exception are those populations living close to borders, living in two countries or travelling frequently, who might therefore do some shopping abroad. The greater the geographical or psychological/cultural/linguistic proximity and the more frequent between-countries consumer travel and multilingualism is, the more likely it is that some consumers will be exposed to what happens in the other country-market. By actually comparing the details on the back of product packages, or by experiencing similar or identically branded and packaged products offered in different country-markets, those consumers may themselves find differences in lists of ingredients, nutritional compositions, taste or texture, etc. Yet, for the greater part of consumers, the existence of different versions is likely neither suspected, nor detected.

Yet, product evaluation is a dynamic process. Consumers might become exposed to the DC-SIP issue through communication with other consumers, or via a third party, like an NGO or public media. If such new information becomes available and is deemed relevant, consumers will re-assess their evaluation. Even if food consumption decisions tend to be highly repeated decisions, new information which causes a significant disconfirmation of expectations may disrupt this repeated process, as illustrated in the right-hand side panel of Figure 9.

Once people become exposed to the fact that different country-markets receive different product versions, consumers may act in different ways. Strong cultural differences between countries, trust and beliefs, and expectations (what practices to expect from industry) are relevant here and will guide the direction and strength of reaction which might differ between and within countries.

Media coverage suggests that DC-SIP has indeed generated a relatively strong reaction from consumers in new Member States (The Economist, 2017)¹⁸. In particular, consumers from Romania, Hungary and Lithuania participating in the focus group discussions reported feeling betrayed and angry when they learnt they were being offered different products (Di Marcantonio *et al.*, 2020). Based on the media coverage of the topic, the dissatisfaction seems to go beyond a possible direct reduced utility caused by the different composition, but instead indicates that consumer welfare (in the broader sense) might be negatively affected by perceptions of deception, injustice and unfairness. This appears to be true mainly in situations where consumers' perception of the quality of the version offered in their own market is lower than in other markets. The focus group discussions

¹⁸ Several press articles have used very strong language on the topic (e.g. 'food apartheid' <https://phys.org/news/2018-04-eu-wide-tackle-food-apartheid.html>)

confirmed this. While consumers from all six EU Member States agreed that companies cannot be allowed to mislead consumers, and that products of equal quality should be offered to all EU consumers equally, reactions from consumers in the New Member States were clearly much stronger (Di Marcantonio *et al.*, 2020).

4.2 Consumers' perception of deception and unfairness

The dissatisfaction resulting from consumers' exposure to the DC-SIP issue may derive from two potential sources: (1) perception of deception, and (2) perception of unfairness. First of all, awareness of different product versions being supplied to different country-markets may disconfirm consumers' expectations about the (global or foreign) branded product. Their trust in the value and attributes assigned to the (global or foreign) branded product, including values of transparency and ethical behaviour (Di Marcantonio *et al.*, 2020), their belief in branded products being identical across countries as suggested by similar or identical packaging and branding, their feeling of belonging to a larger community, or their belief that the branded product guarantees a minimum or higher quality, are thereby disrupted. This disconfirmation of expectations may lead consumers to feel deceived or misled.

Second, the fact that product versions are not equal across country-markets may itself generate a feeling of unfairness. While consumers recognise differences in local preferences among European countries and welcome these differences in preferences being taken into account, they insist that food safety standards, minimum quality standards and the main product characteristics should be guaranteed everywhere. When perceptions arise that these basic requirements are not respected equally in all country-markets, this may lead to feelings of unfair treatment (Di Marcantonio *et al.*, 2020). Various theories have been developed to explain the concept of fairness. Insights on consumer perception of unfairness can be derived from the literature on price inequality and price fairness (Campbell, 1999; Oliver and Swan, 1989b; Xia *et al.*, 2004).

Equity theory and the theory of distributive justice suggest that perceptions of unfairness are induced when a person compares an outcome with another's outcome (Xia *et al.*, 2004). Price unfairness perception occurs when consumers learn that they paid more than what a comparable reference party paid for a product or service (Xia *et al.*, 2004). This 'reference party' may be "another person, a class of people, an organisation, or the individual himself relative to his experiences from an earlier point in time" (Jacoby (1976), p. 1053 cited in Xia *et al.* (2004)). Similar perceptions of unfairness of DC-SIP can result from realising product versions are different from those offered to a comparative other (consumers in a different MS in this case).

The dual entitlement principle (Kahneman *et al.*, 1986) argues that fairness perceptions are governed by the belief that firms are entitled to a reference profit and customers are entitled to a reference price. Price unfairness perceptions indicate that customers assess a seller's price as unreasonable, unacceptable, or unjustifiable. Stakeholders may also react if they judge firm strategic behaviours as illegitimate, deceptive and unethical and unfair (Smith *et al.*, 2010). The perspective changes depending on how the entitlement of firms and consumers is affected and may occur when prices do not reflect costs, and are thought to result from increased firm profit-seeking or monopoly power (Bolton *et al.*, 2010; Kahneman *et al.*, 1986). Under this principle, perception of unfairness around DC-SIP may then depend on the reason why different product versions are offered: changes in the composition of a product for the purpose of increased firm profit may be perceived as unfair, while being perceived as justified (or less unfair) when this is a company's response to different costs or constraints faced (e.g. differences in regulations, culture, technology constraints).

Perceptions of inequity and unfairness are likely to be asymmetric, and individuals care more when they are disadvantaged relative to when they are advantaged by inequity (Kahneman and Tversky, 1980). This asymmetric inequity has been documented for price unfairness perceptions as well. An equivalent magnitude of price inequality is found to generate a smaller degree of perceived unfairness when the inequality is to the buyer's advantage than when it is to the buyer's disadvantage (Ordóñez *et al.*, 2000). Similarly, asymmetric fairness perceptions can be expected to arise in response to DC-SIP, at least when consumers in different country-markets have the same preference ranking and agree on which of the product versions is perceived as being of higher quality. Therefore, consumers' unfairness perceptions in markets receiving the lower-quality versions are likely to be much larger compared to markets receiving the higher-quality versions, which is confirmed by the different media attention to DC-SIP in different MS and by the much stronger reactions by consumers in the focus group discussions held in New versus Old Member States (Di Marcantonio *et al.*, 2020).

For consumers who are supplied with what they perceive as the high-quality version,¹⁹ the issue of DC-SIP is likely seen as non-central to them, and they may not pay attention, or treat the information as peripheral. Information on the occurrence of DC-SIP may even increase consumers' evaluation of the product, and its perceived utility when it is seen as a confirmation of the high quality of the product version received in their own country- market.

4.3 Subsequent consumer coping strategies

Both deception and unfairness will affect the satisfaction consumers obtain from a product, and may generate consumer responses and affect (re)purchasing behaviour.

As expectancy-disconfirmation theory suggests, satisfaction is a function of a combination of expectations and disconfirmation which, in turn, determines behaviour (Oliver, 1980). The actual impact of perceived deception on purchases will depend on the perceived severity of the problem, consumers' tolerance for ambiguity, as well as national culture (Laufer *et al.*, 2005; Sengupta *et al.*, 2015). Drawing upon service failure literature, subsequent behaviour includes continued loyalty, voice (complain to the provider, or another party) and exit (Colgate and Norris, 2001: 216). In all cases, though, disconfirmation of expectations that product versions are equal across countries or that the branded product guarantees a certain quality will likely lead to a breakdown of trust in the uniformity or status they associated with (global or foreign) brands (Vassilikopoulou *et al.*, 2018).

Unfair price perceptions generate negative emotional and behavioural reactions. Some emotional responses such as unease do not lead to any specific action (Urbany *et al.*, 1989), but other stronger feelings may have negative consequences for the seller, such as lower satisfaction and decreased trust (Garbarino and Maxwell, 2010; Oliver and Swan, 1989a), complaints and negative word of mouth (Campbell, 1999), reduced purchasing intentions and intentions to switch (Martins and Monroe, 1994), and increased price sensitivity (Sinha and Batra, 1999). Through these actions, consumers try to restore equality, seek retribution for perceived injustice and try to find psychological comfort or to harm the seller (Bechwati and Morrin, 2003; Zeelenberg and Pieters, 1999). Studies show that this does not only involve comparing their own outcome to that of others. For example, even when prices were lowered after consumers made their purchases, they tended to buy less in the future (Anderson and Simester, 2010). And even among customers who receive discounts, and were thus not affected by price unfairness themselves, seeing others pay higher prices led them to buy less (Wang and Krishna, 2012). There is less evidence on how these immediate consumer responses translate into short- and longer term shopping behaviour across individual products and specific product categories (Bechwati *et al.*, 2009; Martín-Ruiz and Rondán-Cataluña, 2008).

Disconfirmation resulting from offered product versions being perceived as inferior, may lead to a breakdown of consumers' trust in the uniformity or status they associated with global brands, and it may negatively influence consumer purchasing intentions (Vassilikopoulou *et al.*, 2018), or drive them to react in similar ways to those explained above. During focus group discussions, some consumers from New Member States indeed stated that they lost trust in brands, and that DC-SIP resulted in local products and brand becoming more popular (Di Marcantonio *et al.*, 2020). Yet, if this negative experience has only a limited role in their motivations for product choice, or if no better alternative products are available, no effect on purchases may take place and brand loyalty may continue. Locational constraints on choice, time or budget constraint, habits or inertia act as further barriers to exit and form a substantial element whereby some customers feel locked in a lower quality provision (Colgate and Norris, 2001: 225) and consumers may eventually decide to remain passive and continue purchases. Once the information on the occurrence of DC-SIP is revealed, this will involve an alteration of their perception regarding what food quality to expect. The information asymmetry then exists no longer and dissatisfaction and unfairness perceptions may possibly weaken with time. Note that when consumers do experience dissatisfaction or feelings of unfairness which do not eventually end up in changing product choices, for example because of the lack of better alternatives, there is no impact of DC-SIP on purchasing behaviour. Yet, consumer utility can still be negatively affected by DC-SIP, if the version offered to the own country-market is perceived of lower value. Besides, when feelings of deception or unfair treatment persist – even though not generating a purchasing response – consumer welfare in the broader sense of the concept will be negatively affected.

¹⁹ This may refer to consumers from the country which is typically associated with the higher quality version (e.g. Germany), but holds equally well for consumers in countries that get products that are reported by media reported to be inferior in quality, but whose individual preference goes to the so-called inferior product.

Consumers' options for reaction and voice will depend on how strongly they believed in and cared about product versions being the same. Some consumers may discard the relevance of the DC-SIP issue, or might not be surprised that this happens. Yet for other consumers, this belief may be strong and an essential motivation for them to voice their contempt and react. These consumers may feel strongly dissatisfied and that they have been treated unfairly. The importance of companies' perceived fairness, or the reaction related to this feeling of unfair treatment, may be strong enough to generate a reconsideration of purchasing decisions, and consumers may decide to exit the brand, ceasing buying and switching to other food suppliers/retailers. If consumer reaction is particularly strong, this may even result in a disruption of brand trust, and affect the overall brand image of the company, potentially going beyond the specific DC-SIP product concerned.

Depending on how strongly consumers feel about this, a decision to cease buying and switch to other food products may be only a short-term reaction, however, after which consumers may revert to their habitual purchasing pattern. Yet, when consumers care strongly about fairness, this effect may last longer. In this case, there might be a substantial decrease in consumers' perceived product utility, which becomes lower compared to alternative offerings, so consumers will likely switch. It remains so if the company continues to provide the same perceived inferior quality product version.

4.4 Summary: Perceived deception and unfairness and DC-SIP's implications for food choices

If consumers are not informed about DC-SIP, the existence of different versions will not be detected and their purchasing decisions will not be affected²⁰. In these cases, DC-SIP would not affect consumer decisions and welfare in a utility framework, but the information asymmetry related to DC-SIP may still play an important role in explaining consumers' concerns and reactions.

Consumers might be exposed to the DC-SIP issue through various means, such as through communication with other consumers, or via a third party, public media. If DC-SIP is revealed to consumers, they might re-assess their evaluation and expectations for the quality of the product, which might lead to different purchasing decisions. Moreover, consumers may react in different ways depending on cultural differences, trust and beliefs, and expectations.

The dissatisfaction resulting from consumers' exposure to the DC-SIP might derive from two potential sources:

Perceived deception: Awareness of DC-SIP may disconfirm consumers' expectations associated with particular brands (e.g. their feeling of belonging to a larger community, their belief in the branded product guaranteeing a minimum or higher quality, status associated with brands). This disconfirmation of expectations may lead to consumers feeling deceived or misled.

Perceived unfairness: The fact that product versions are not equal across countries may generate a feeling of unfairness. The extent of unfairness perception depends on the reasons and motivations for DC-SIP. Unfairness perception occurs particularly when consumers perceive that they are treated unequally compared to other consumers (consumers in other countries), or they perceive the DC-SIP to be illegitimate, deceptive, unethical or generating disproportionate profits for brand owners.

Perceptions of deception or unfairness with respect to DC-SIP are asymmetric: consumers are expected to have a stronger perception of deception and unfairness in markets receiving the lower quality versions as compared to markets receiving the higher quality versions. In markets where the high-quality version is offered, consumers will likely consider the DC-SIP issue less important.

Both deception and unfairness perceptions might affect consumers' satisfaction from a product and may generate consumer responses and affect (re)purchasing behaviour. Consumers' reaction to DC-SIP will ultimately depend on how strongly they believe that product versions vary, on the magnitude of the perceived unfairness, and the disconfirmation of expected brand value.

For consumers with low perceived unfairness and disconfirmation of expectations, their reaction to DC-SIP will likely be insignificant, or may be short-lived.

²⁰ The exception are consumers living close to borders or travelling frequently.

If the perceived unfairness is strong, or disconfirmation of expectations is sizable, it might generate consumer reactions such as reconsideration of purchasing decisions, reduced purchasing intentions, switching to other brands, reduction of the company's brand trust and image, and breakdown of consumer trust in the uniformity or status they associated with global brands.

Depending on how strongly consumers feel about DC-SIP, consumer response may be only a short-term reaction, after which consumers may revert to their habitual purchase pattern, while if consumers care strongly about DC-SIP, this effect may last longer.

However, even in the presence of high perceived unfairness and disconfirmation of expectations, consumers may not necessarily respond by changing their purchasing behaviours, for various reasons. The negative experience may play only a limited role in their motivations for product choice, no better alternative products may be available, they may have budget constraints, or habits or cultural factors may play a role.

On the other hand, consumers' non-response to DC-SIP by not changing their purchasing behaviours might still lead to reduction in consumer welfare due to feelings of unfairness or dissatisfaction from brand value if the version offered in their own country-market is perceived to be of lower value.

5 Conclusions

Differences in the composition of seemingly identical branded food products (DC-SIP) have generated concerns about products of different quality being offered in different parts of the EU single market. This report builds on the existing conceptual and empirical literature, to analyse the potential impact of DC-SIP on consumers' purchasing decisions and welfare.

Starting from a simple utility framework, the report illustrates the potential impact of DC-SIP on consumer purchasing decisions and welfare. Welfare in this model is defined as the consumer surplus derived from purchasing a product, which corresponds to the consumers' valuation (willingness-to-pay) of the product, minus the price of the product. The process of product valuation, i.e. the formation of quality expectations through consumers' assessment of various intrinsic and extrinsic factors, is therefore crucial. Allowing for different preferences and quality perception functions across countries and consumers results in different possible outcomes. In order to analyse the effect of DC-SIP, the report presents different potential situations to answer the question of whether consumers' purchasing decisions and welfare would be different if they were offered a different product version than the one supplied to their market.

The literature shows that consumers care about the quality of food products. Yet, it is likely that consumers do not detect differences in composition. In the first place, this is because, except for those shopping frequently abroad, the direct comparison of different product versions is not possible. But even for those who compare products, differences may be minor, or may not be easily noticed. Consumers rely primarily on extrinsic attributes (brand, geographic origin, packaging) in their formation of quality expectations, resulting in intrinsic differences in composition going unnoticed. Consumers may, for example, build purchasing decisions around the expectation that branded products, and especially foreign or global brands, guarantee a minimum or homogeneous quality across markets. The degree to which such extrinsic factors play a role will vary with the strength of the brand, the country the brand is associated with, the status or quality expectations that consumers in that society attach to (global/foreign) brands, product category, judgement accuracy, etc. The differences between DC-SIP versions is probably only noticed by consumers in situations where the intrinsic differences are significant, are important cues for signalling quality, and/or if they are relatively easily detectable. As a result, as long as differences in the intrinsic composition of the product are not explicitly revealed, consumers may value products equally.

Different scenarios are possible when consumers do realise or experience differences, either by being informed about differences between versions by comparing back-of-package information or through experiencing the product (which happens only rarely). Initially in these situations, purchasing and consumer welfare might not be affected, for example because the quality dimension in question might be of little or no importance in their final decision-making. Consumers may also prefer their local version over versions offered in other Member States. If product versions are successfully adapted to local taste, then on average consumers would prefer the product version supplied to their market. As long as the other-country product was not offered at a lower price that compensates for the lower perceived quality, consumers would still purchase the originally supplied product, and the effect of DC-SIP on purchasing decisions and welfare would be positive.

On the other hand, in other situations consumers may actually have a higher preference for product versions being offered in other Member States. If this other-country version is offered at a higher price, for example because of costs related to the sourcing of ingredients, then the overall impact is ambiguous and will depend on consumers' willingness to pay this higher price for the higher perceived quality. Yet, if consumers' higher valuation of the other-country version covers its higher price, or if the other-country version is offered at the same or a lower price, then DC-SIP is leading to a reduction in consumer welfare. If consumers were offered the other-country product version, they would buy it instead of their local version. This means that in this scenario, purchasing decisions would be affected and consumer welfare would be negatively affected by DC-SIP.

Finally, the report assesses the impact of the information asymmetry related to DC-SIP. Due to the impossibility of comparing two product versions for most consumers, and the complexity of consumer decision-making in a context of a lot of informational cues and limited time, the issue of DC-SIP likely goes unnoticed by most consumers. Media coverage of the topic has revealed that different product versions exist, and has generated consumer reactions which cannot be easily captured in the utility framework. First, there is the impact of consumers' perception of deception, resulting from the disconfirmation of expectations. Especially in those countries and among those consumers which attach high value and status to global brands and had expectations of and trust in

(global/foreign) branded products being identical across countries, deception may loom large. The report describes how the expectations around brands, geographic origin and globality are typically strong in new EU Member States and emerging countries, and in societies with higher inequality.

Besides the disconfirmation of expectations, the mere existence of different product versions in the single market may be perceived as unfair. As unfairness perception is typically asymmetric, these feelings of unfair treatment are likely to be perceived only, or perceived much more strongly by those having received the perceived inferior product version. It may generate consumer dissatisfaction and affect brand trust, and consumers will engage in coping strategies. If feelings are strong, consumers may react negatively in various ways (e.g. switch to other brands, reduction of the company's brand trust and image, breakdown of consumers' trust in the uniformity or status they associated with global brands), including complaining publicly, and stopping brand purchases. The role of deception and unfairness perception may help to explain why in some cases a relatively strong consumer reaction has been observed, even if differences in composition are small, and even if a utility framework suggests that consumer welfare is not or is hardly affected.

This report analysed the impact of DC-SIP consumer purchasing choices and welfare, based on the existing conceptual and empirical literature in the fields of demand theory, behavioural economics, marketing, consumer psychology and other related areas. The existing literature does not provide a specific assessment of DC-SIP. As a result, the analyses of this report do not quantify the exact impact of DC-SIP, but rather provide understanding of the potential impacts DC-SIP might have on consumers. The magnitude of DC-SIP's effect on consumers is an empirical question which Di Marcantonio *et al.* (2020) attempt to address as a part of the same project.

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List of abbreviations

DC-SIP	Differences in Composition of Seemingly Identical branded products
NGO	Non-governmental organizations
MS	Member State
UCPD	Unfair Commercial Practices Directive

EU member states abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
D-E	East-Germany
DK	Denmark
D-W	West-Germany
EE	Estonia
EL	Greece
ES	Spain
EU 27	27 Member states of the European Union
FI	Finland
FR	France
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SK	Slovakia
UK	United Kingdom

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doi:10.2760/51123

ISBN 978-92-76-14303-1