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Analysis

Sustainability labels on coffee: Consumer preferences, willingness-to-pay and visual attention to attributes

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ABSTRACT

Sustainability labels are important tools that help consumers assess the sustainability aspects of food. While past studies have focused on visual attention to nutrition information, no study has investigated the visual attention paid by consumers to the sustainability information on food. Our study contributes to the need to better understand consumers' attention to sustainability information when making food choices. The objective was to explore the importance that consumers attach to sustainability attributes and investigate how this relates to the visual attention paid to these attributes during the choice decision and to willingness-to-pay (WTP). Visual attention during the decision making process was measured in terms of fixation time and fixation count, which were then analyzed in relation to the stated attribute importance. Our results suggest that consumer segments with differences in stated attribute importance, visually attend differently to these attributes. Higher valued attributes also exhibited higher visual attention. Our results suggest that consumers who spend more time attending to and fixate more on sustainability attributes value them more.

1. Introduction

Sustainability characteristics in food are credence attributes. This type of attribute is neither directly observable by consumers before purchase, nor can it be experienced after purchase. Sustainability labeling programs are designed to support consumers' food choice since they serve as a tool to explicitly communicate the presence of sustainability aspects on food products. Voluntary sustainability labels and their corresponding standards have emerged during the past decades focusing on a range of sustainability issues, and empowering consumers to make more sustainable food choices. The growth in sustainability labels is one of the signs of their increasing popularity. The European Commission (EC) reported the existence of a total of 129 food information schemes related to sustainability at the European Union (EU) level as a whole or at the national level in a specific EU Member State (EC, 2012). However, when shopping for food, consumers may be overwhelmed with the information provided and time constraints may prevent them from attending to the wealth of available information on food products. As mentioned by Grunert (2011), the information load may limit the use of sustainability labels. Consumers may apply heuristics to simplify their decision and as a result not pay attention to all the product attributes when choosing food (Verbeke, 2008). While past studies have evaluated consumers' visual attention to nutrition information during food choice with the use of eye-tracking, no studies have applied this method to sustainability information. The current study contributes to this research gap by studying the visual attention paid to several sustainability labels on coffee.

Consumers encounter several barriers that may prevent sustainability labels from affecting their choice and leading them into more sustainable eating behavior (for an overview see Grunert, 2011). First of all, the label on the food package should at a minimum be noticed by consumers (Grunert, 2011; Thøgersen, 2000). Consequently, exposure to the label followed by attention are the first steps in information processing (Solomon, 2013), possibly leading to informed sustainable food choice. A large body of literature employs self-reported use of sustainability labels (Grunert et al., 2014) or importance of sustainable food attributes when examining the effect of sustainability on food choices (Vanhonacker et al., 2013). Our study moves beyond the reliance on self-reported measures of sustainability label use, and instead uses

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eye-tracking measures to quantify the visual attention given to sustainability labels while making food choices.

Attention is an important step in the consumer decision making process as it is a prerequisite for information processing. Solomon et al. (2013, pg 134) define attention as "the degree to which consumers focus on a stimulus within their range of exposure". With eye-tracking technology, respondent's gaze can be recorded to monitor their visual attention when making food choices. Visual attention is influenced by bottom-up and top-down factors (Corbetta and Shulman, 2002; Pieters and Wedel, 2004; van der Laan et al., 2015). Bottom-up or stimulus-driven form of attention is caused by characteristics of the stimulus itself (color, size, location, saliency) and occurs without specifically searching for them (Wolfe, 1998). Top-down or goal-directed form of attention, on the other hand, is caused by the voluntary search for specific information (Koch, 2004) based on pre-existing preferences, interests, personal goals and involvement (Ares et al., 2013; Pieters and Wedel, 2004). This study focuses on top-down attention, focusing on the involvement and search for sustainability information (Pieters and Wedel, 2004). Involvement, defined by Zaichkowsky (1985, pg 342) as "a person's perceived relevance of the object based on inherent needs, values, and interests", influences the information search during the buying process. Highly involved consumers will more actively search for information and will use more information before buying (Laaksonen, 1994; Verbeke and Vackier, 2004). Behe et al. (2015) reported that the level of consumers' involvement and the importance placed on products can influence visual attention. Specifically, they reported that highly involved consumers exhibit greater fixation counts and greater total fixation duration on product information compared to consumers with a lower product involvement. Similarly in our study, it is likely that consumers attaching more importance to sustainability aspects of food are also more involved in these aspects and will visually attend more to sustainability information during food choice.

Eye-tracking technology has led to useful insights into consumers' use of nutritional information on food packages (Antúnez et al., 2013, 2015; Ares et al., 2014; Bialkova and van Trijp, 2010, 2011; Bialkova et al., 2013, 2014; Graham and Jeffery, 2011; Graham et al., in press; Jones and Richardson, 2007; Siegrist et al., 2015; van Herpen and van Trijp, 2011; Visschers et al., 2010). For a review of eye-tracking and nutrition information, see Graham et al. (2012). For example, Visschers et al. (2010) reported health motivation to stimulate consumers to attend to nutrition information when making a food choice. However, eye-tracking technology has not yet been applied to the assessment of the effect of visual attention to sustainability information on food packages. With an increasing number of labeling schemes on sustainability aspects of food, it is important to improve our understanding of consumers' visual attention to sustainability labels. We herewith provide a first study addressing this research gap.

The aim of this study is to explore how visual attention affects attitudes and consumer choice behavior for sustainable certified coffee by measuring visual attention to sustainability and price attributes during a choice experiment (CE). The study is divided into five parts. Part 1 gives an overview of the self-reported importance of coffee attributes including attributes related to sustainability. Furthermore, we identify three consumer segments based on the self-reported importance of sustainability labels on coffee and the importance of coffee price. Part 2 presents the results of the eye-tracking measures and gives insights on the use of sustainability information. In Part 3, we study the relationship between stated attribute importance and visual attention to these attributes. In particular, we first explore if there is any relationship between visual attention and perceived importance of various attributes, including sustainability labels and price. Second, we test if visual attention differs across consumer segments that attach different degrees of importance to sustainability and price. In Part 4, we study consumers' preferences and willingness-to-pay (WTP) based on choice behavior for coffee. We determine the consumer preferences and WTP for the sustainability labels for the overall sample and also across the consumer segments. In Part 5, we study the effect of visual attention to sustainability labels on choice behavior for coffee and determine whether visual attention plays a role in explaining choice behavior. In particular, we investigate whether a participant's degree of visual attention influences his or her preference and WTP for that particular attribute when having to make trade-offs with other attributes. Overall, the analyses allow us to determine if consumers who pay more attention to an attribute effectively value it more.

2. Sustainability Labels on Coffee: An Overview

The coffee industry is viewed as a pioneering industry for sustainability certification schemes and as such, it became the model for other commodity groups (Pierrot et al., 2011; Reinecke et al., 2012). The first Organic coffee was produced in 1967 and coffee became the first Fair Trade[1] labeled product in 1989 (Consumers International, 2005). Coffee is one of the most popular Fair Trade products in terms of number of products (632 in the US and Canada, see DiMarcello et al., 2014), number of farmers involved (660,700 globally in 2012, see Fairtrade International, 2013), and in terms of sales volume (Fairtrade International, 2013). It is the most commonly bought Fair Trade product in the US (Mintel, 2009) and has the largest market share compared to other Fair Trade products (Dragusanu et al., 2014).

In addition to having more established initiatives in the sustainable certified coffee market such as Fair Trade and Organic coffee, various other third-party sustainability certification schemes[2] have emerged including Rainforest Alliance, Bird Friendly, and UTZ certified (Consumers International, 2005; Dragusanu et al., 2014; Pierrot et al., 2011). All these schemes include sustainability criteria with varying emphasis (for a detailed comparison see Kolk (2013), Reinecke et al. (2012), SCAA (2010) and Giovannucci and Ponte (2005)). For example, Fair Trade has the primary goal of improving the livelihoods and well-being of producers. It also stands for improved working conditions, and better buyer–seller relations (Dragusanu et al., 2014; Giovannucci and Ponte, 2005). The Fair Trade scheme emphasizes having a price premium for the producers (Reinecke et al., 2012). Rainforest Alliance or Organic has a greater focus on goals other than income for producers (Dragusanu et al., 2014). For instance, Rainforest Alliance assures that the products have been grown and harvested using environmentally and socially responsible practices and focuses on biodiversity conservation (Reinecke et al., 2012), while the USDA Organic label indicates that the coffee is produced according to the USDA Organic standards. Finally, Bird Friendly certification requires Organic production in addition to providing a forest-like habitat for birds. UTZ certified, founded in 2003, is the most recent of the major certification schemes. It focuses on better business practices and incorporates the GLOBAL G.A.P. standards for coffee (Pierrot et al., 2011). It is focused on transparency in the supply chain and responsible production (Reinecke et al., 2012). Carbon Footprint labeling is another sustainability label which could be present on coffee but is rather rare. This label indicates that the producer is reducing its carbon emissions. A specific example is the Carbon Trust's carbon reduction label, which indicates that the company

[1] "fair trade", "Fair Trade" or "fairly traded" refer to the general concept without reference to a particular certification, whereas "Fairtrade" refers to the specific certification system run by Fairtrade International (FLO) (cf Davies et al., 2010; Dragusanu et al., 2014). As of 31 December 2011, the "Fair Trade USA" ended its membership with FLO and launched an independent standard and certification system. While FLO "believes that certification should generally be restricted to small producers, Fair Trade USA feels that large producers and plantations should also be certified" (Dragusanu et al., 2014, p 218).

[2] In our study, we focus on coffee packages present in the store and therefore focus on third-party sustainability schemes. In the coffee market, there was also a strong growth in corporate programs, also called "in-house standards" (e.g. Nespresso AAA Sustainability Quality, Starbucks C.A.F.E. practices) and the sector initiative 4C (the Common Code for the Coffee Community), which is a business-to-business initiative. All three of these standard are verification systems, not certification (Kolk, 2013).