



# Do labels that convey minimal, redundant, or no information affect consumer perceptions and willingness to pay?



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## ABSTRACT

With more labels appearing on food products, it becomes questionable how many add relevant information to consumers. Some products have labels conveying no, redundant, or minimal information, while others have multiple labels that contain overlapping information. The expansion of these types of minimal-information labeling suggests a perception among marketers that labels improve consumers' perceptions and increase willingness to pay (WTP). Using watermelons, field experiments with 328 participants were conducted to estimate WTP differences between (1) a product with a minimal-information label and no label; and (2) a product with a minimal-information label with and without an overlapping label. While the minimal-information label added nothing new about the origin of the watermelon (redundant information), added minimal information on taste, and provided no mention of food safety (no information), perceptions among participants of all these attributes positively and significantly increased in both label comparisons. The WTP for the product with a minimal-information label also increased, demonstrating consumers will sacrifice real money for products with these labels. The evidence suggests that labels have capabilities to shape perceptions and influence WTP even beyond those attributes they make a claim regarding.

## 1. Introduction

Food labels have proliferated as consumers have become more interested in food production practices and nutrition. Research shows that labels creating impressions that foods are safer, healthier, more environmentally friendly, or have other positive social benefits can lead to significant premiums. Because many of these factors are credence attributes, the label assists consumers by conveying information that segments of the population care about and helps them obtain attributes they desire. However, food products now contain enough different labels, certifiers, and claims that it is questionable how many are providing new and useful information to consumers. Many foods even display multiple labels, some with overlapping claims giving minimal information to consumers. Recent food research seeks to understand how the presence of such no-information labels impact consumer perceptions and willingness to pay (WTP), and this study seeks to expand this knowledge by offering one of the few estimations of the impact of minimal-information labels. Here, no-information labels are defined as providing information already known to the consumer (i.e., no-new information) or zero-information. Minimal-information labels are

defined as those that convey a non-brand attribute that lacks substantive evidence (herein, an undefined link between grower membership in an association and a substantive food-product quality improvement) or is amorphous (herein, a phrase that loosely indicates a higher quality taste attribute).

### 1.1. Study background and objectives

This study examined the impacts of minimal-information labels using field experiments with watermelons, which were selected for two reasons. First, watermelons are locally grown and popular in the mid-Atlantic region of the U.S., where the study was conducted. Watermelons constitute the highest sales among fresh vegetables and come from the greatest number of fresh-market farms in Delaware, which is the origin of the watermelons used here (Delaware Department of Agriculture, 2015). Second, the researchers were able to gain access to a label from the Mar-Del Watermelon Association, which conveys minimal information to consumers (the Mar-Del label, hereafter).

The Mar-Del label contains two informational concepts and a claim. The first concept was that the watermelon was grown in either

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Maryland or Delaware. To negate confusion about origin and turn it into a no-information attribute, participants were told all watermelons (labeled or not) in the study were grown in Delaware—and signage was used to reinforce this.<sup>1</sup> The second informational concept was that the grower was part of an association. However, as backed by pretesting and data collected during the experiment, the vast majority of participants had never heard of the Association—and the Association does not label individual watermelons for sale and has a limited marketing presence. These points suggest the label was unlikely to be perceived as a brand by many, if any, consumers. Additionally, while brands can generate premiums, their use is limited for fresh produce (Kaufman et al. 2000), and consumers have a lower WTP for brands of fresh produce compared to other product categories (Jin, Zilberman and Heiman 2008). The claim that was introduced was that the watermelon is “MAR-DELicious.” This is clearly a marketing slogan, with no evidence to substantiate the claim.

Collectively, the Mar-Del label should convey minimal information. The label may provide some consumers with potential additional information in the form of perceptions concerning the grower association and taste claim, but these attributes lack substantive evidence and are amorphous. Moreover, the locality provides no information and thus should not affect perceptions, as the Mar-Del label and “no-label” watermelons were described as being from Delaware. Hence, one objective of this study was to understand how the inclusion of the Mar-Del label changed consumers’ perceptions and WTP relative to unlabeled watermelons. The perceptions tested were expectations of whether the watermelon was local, how it tasted, and its safety; in sum, the label provided no new information on origin to influence local expectations, minimal taste information with its marketing slogan, and no obviously relevant information on food safety.

A second objective was to examine overlapping labels as a form of minimal information. The researchers sought to determine if any perceptions or WTP would be different when the Mar-Del label was added to an unlabeled watermelon versus one already containing a label. The other label was a newly designed “Delaware preserved farm” label, which indicated the watermelon was grown on a Delaware farm that was part of the land preservation program (for background on this label, see Duke, Bernard, Albrecht, & Vitz, 2017). This label provided a redundancy with the local claim (both with verbal/written instructions and the Mar-Del label). However, it did provide new, meaningful information about the farm of origin. For instance, farmers by preserving their land convey a greater degree of permanence and commitment to farming, which can impact the development patterns in local communities and can indicate to consumers that their food comes from a farmer that is, somehow, “different” from farmers who have not enrolled. Having the second label was also thought to reduce an effect simply arising from there being any label versus unlabeled. Overall, the field experiment elicited perceptions and WTP values for watermelons with four label types: none (unlabeled), a Mar-Del label, a preserved farm label, and both a Mar-Del label and preserved farm label. The effects of location and venue were also examined by conducting field experiments in counties across three states at both farmers’ market and general-population venues such as parks.

## 1.2. Literature review

By stating the watermelons were grown in Delaware, this study relates to those looking at interest in local foods. There has been a significant increase in this interest, and often consumers express greater trust in local food as it is perceived as safer and easier to trace back to its origin (Nganje, Hughner, and Lee, 2011). Consumers pay a premium for local foods for many reasons (Feldmann and Hamm, 2015), such as

<sup>1</sup> A sample watermelon was placed in front of participants with a sign, “This is an example of our watermelons. All watermelons were grown in Delaware.”

beliefs in higher quality, better taste, and freshness (Bond, Thilmany, and Bond, 2008; Darby, Batte, Ernst, & Roe, 2008; Grebitus, Lusk and Nayga, 2013). This study will help to determine if a label stating origin increases the perception of these aspects over simple verbal and written communication of origin.

Looking at other labels, McCluskey and Loureiro (2003) examined preferences and WTP based on several label types and determined that consumers needed to perceive higher quality associated with labels in order to place a premium on the food. Bernard and Liu (2017) have shown that labels can alter taste perceptions of local and organic labels, while Wansink, Park, Sonka, and Morganosky (2000) examined the impacts of soy labeling on perceptions of taste and health and demonstrated diminishing perceptions of taste with their label treatment. Loureiro, McCluskey, and Mittelhammer (2001) also showed how label types could create perceptions of different quality.

Only three papers were found that estimated the impact of labels conveying minimal information. First, Barreiro-Hurle, Gracia, and de Magistris (2010) studied the impact of multiple health and nutrition labels through choice experiments using a healthy and less healthy product. They found that multiple competing health and nutrition labels representing redundant or similar information could significantly decrease product preference.

Second, Fonner and Sylvia (2015) examined the impacts of multiple labels on consumer choice with a choice experiment for two types of seafood over four classes of information: safety, quality, local, and ecolabels. Although the information classes were distinct as opposed to competing, two of the classes did not provide as much additional information as the others. They found that because consumers tend to judge quality based on perceived reliability of the seafood producer and retailer, quality labeling was not as effective a signal, reducing preferences for quality labels. They pointed out that the safety labels provided minimal information as the products presented were not associated with any health risks or advisories. They found no evidence that adding additional minimal-information labels to a product diminished preference for a local label and that each label was found to have a significant influence on choices.

Lastly, Heng, Peterson, and Li (2016) examined consumers’ preferences with an online choice experiment for various labels of eggs to understand the impact of multiple labels, including superfluous labels providing no new information. To test superfluity, they used eggs, because while they can bear a hormone-free label, the USDA prohibits the use of hormones in poultry products making all eggs hormone-free. In addition, eggs labeled as organic can also have labels saying that they are cage-free, antibiotic-free, or natural, which are all redundant given the definition of organic. To test the impacts of redundant information, respondents were presented with the superfluity of the labels in a statement that “all egg laying hens in the United States are not given hormones, and certified organic eggs are produced by hens living in a cage-free environment.” Despite being told of superfluity, consumers still valued the labels.

However, the limited work in this area has used stated preference methods. A contribution to a better understanding here comes from the use of non-hypothetical field experiments. Non-hypothetical experiments are increasingly common in food research, including those published in this journal (e.g., Pappalardo and Lusk, 2016; De Groot, Chege, Tomlins, & Gunaratna, 2014). In addition, no studies were found concerning impacts of minimal information in labeling for a local attribute.

## 2. Material and methods

Non-hypothetical field experiments were conducted using real money and watermelons in July and August 2016. Experiments were conducted in three states and four counties: New Castle and Sussex County, Delaware, Cecil County, Maryland, and Chester County, Pennsylvania. The three states were used to test how the image of the

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