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# Introduction

For many consumers, ethical attributes are relevant considerations that can influence their purchase decisions. Labelling can serve as an important information vehicle for consumers. Labels are used to help firms or producers to effectively communicate information about the production or product quality, especially for credence attributes such as ethical process attributes. By enabling firms and producers to relay more information about their products to consumers, labels can reduce information asymmetry. Thus, labels are used as signals by transforming credence qualities, such as production or product attributes, into search goods.

As discussed above, there are different types of labelling strategies used in food packaging that communicate the underlying standards and features of a product. To summarise the different types of labelling available, Table 1 gives an overview of the four possible labelling strategies. In the following sections, these four food labelling types will be presented in more detail.

# 1. Background

Presenting metric variables on a label, as done with nutritional labels, is a third option to provide information to consumers about a product. In a metric labelling system, the different levels imply different price levels but whereas nutrient labels and the evaluation of nutrients are a means to prevent unhealthy food choices, ethical labelling explains the production process. Furthermore, nutrient labelling is an atypical example: different product types (e.g. full cream milk or skim milk) are contrasted. This has been verified by different consumer studies that suggest that consumers prefer simpler binary nutrition labels (Annunziata *et al.*, 2011).

## Binary labels

Binary labels are the most commonly used labels and dominate the labelling market. However, binary labels provide only a rough indication of product quality. Although a label should be an orientation for consumers while shopping, it has been reported that consumers perceive the increasing number of binary labels as confusing (Annunziata *et al.*, 2011).

## Multi-level labels

A multi-level label can be used to classify the gradation of a product’s ethical standard. There has been little consumer research carried out on the impact of multi-level labelling systems used to indicate the underlying production or process standards of food products. Furthermore, Canavari *et al*. (2017) have suggested the use of a multi-level ecolabel designed especially for the food sector. This study will aim to fill the void in the literature by using an example of an animal welfare multi-level labelling system.

# 2. Materials and methods

In the first survey, the respondents had information about the meaning of a two-stage animal welfare label. The two-level animal welfare label used in both of the consumer surveys was introduced in 2013 by the leading German animal protection association, the German Animal Protection League (Huffaker and Castellini, 2011), which is also the brand allocator. The premium level has higher standards and is marked with two yellow stars (Fig. 1, right). The first consumer survey took place between August and September 2011 with 306 respondents. The study was carried out with household decision makers concerning food purchases across Germany.

# 3. Results

The average wtp for the cutlet was 32.4% higher in comparison with the reference price. For the label with one star, the price premium was 32.6% higher and for the label with two stars, 32.2% higher. A less unexpected result could be observed for the low-fat ham, where the wtp for the premium level is 4.9 percentage points higher than for the access level. The wtp for the premium level is lower than for the one-star label.

# 4. Conclusions

This confirms the assumption that a multi-level label enhances information overload and that a multi-level label is not clear to consumers without additional information being provided. In conclusion, it can be said that information overload is the basic underlying issue of food packaging labelling systems. Nevertheless, consumer choices can be better informed with multi-level label systems as confirmed by Aarset et al. (2004), and Annunziata et al. (2011). It seems that the two-star products introduce higher heterogeneity compared to one-star products.

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