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# **Original Research**

# Investigation on the role of consumer health orientation in the use of food labels



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#### ABSTRACT

Objective: This study explored the relationship between health orientation (i.e. individual motivation to engage in healthy attitudes, beliefs and behaviours) and consumers' use of nutritional information on food labels. Specifically, this study analysed the relationship between a number of direct investments in health (namely those behaviours that can contribute directly to maintain a good health status) and use of nutritional information on food labels.

Study design: Data for the analysis were collected through face-to-face interviews with a sample of 540 Italian consumers in charge of their grocery shopping. Forty grocery stores, including supermarkets and hypermarkets, were selected using a systematic sampling technique.

Methods: Data were analysed using three equations and accounting for endogeneity issues. Results: This study found that those consumer groups with low health orientation (specifically smokers, those who do not exercise regularly, and those with an unhealthy body weight) show little interest in nutritional labels.

Conclusion: Nutritional labels as a tool to promote healthier food choices have a limited effect on those consumers in greatest need of pursuing healthier lifestyle habits. Alternative policy intervention should be undertaken to reach these consumer groups.

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### Introduction

Diet-related chronic diseases, such as overweight and obesity, have reached epidemic proportions in many developed and developing countries, and constitute a public issue not only from a medical point of view, but also in economic terms. These diseases generate negative externalities due to sizable sanitary costs and the reduced productivity of obese

individuals.<sup>1</sup> The obesity epidemic represents a concrete bankrupt threat for the medical systems of many countries,<sup>2,3</sup> denoting a major reason to take action and address consumers regarding healthier food choices.<sup>2,4–7</sup> In this context, one possible measure of public intervention is represented by information, particularly nutritional labelling. Indeed, nutritional labels can play an important role as they convey information on the product characteristics that would otherwise be unknown to consumers.<sup>8</sup> Such information

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represents an aid for consumers in making food choices, as it facilitates comparisons between alternative products, contributing to informed purchasing decisions. In light of the supportive role of nutritional labelling in improving food choices, many countries have promoted policy interventions requiring disclosure of nutritional information on food labels. For instance, in 2011, the European Union revised its food labelling regulations and enacted European Union Regulation No. 1169/2011, which makes it mandatory to include nutritional information on all prepackaged foods.

However, there is still open debate regarding the effectiveness of nutritional labels as a tool to promote healthier food choices. There are two main issues discussed in the literature: (1) it remains unclear if the use of nutritional labelling actually leads to concrete changes in consumers' food choices; and (2) there are still open questions about if, and to what extent, consumers actually use nutritional labelling.

Indeed, with regard to the first aspect, contradictory findings still exist concerning the causal relationship between consumers' use of nutritional information and behaviours. That is, the use of nutritional labels does not necessarily lead to changes in consumers' purchasing intentions, or lead towards healthier food choices. For instance, Teisl et al. 12 found that providing information to consumers does not always lead them to switch their food choices from unhealthy to healthier products. Moreover, as pointed out by Miller Soederberg and Cassady, <sup>13</sup> most previous research was based on correlational data, making it unclear whether the use of food labels is able to result in healthier diets. On the contrary, a number of studies have provided consistent evidence about the positive relationship between the use of nutritional information and healthier food choices. For instance, Drichoutis et al.14 reported that consumers who use nutritional labelling are more likely to choose foods rich in fibre and vitamins, and to avoid sugary and fatty products. Similar results were provided by Neuhouser et al., 15 Kim et al. 16 and Variyam. 17 Loureiro et al. 18 found that the use of nutritional labels was associated with reduced obesity, particularly among women.

As for the second aspect, previous studies demonstrated that several factors can affect consumers' willingness to make use of labelled information, such as sex, education, income, time constraints, <sup>19</sup> label format and nutritional knowledge. <sup>20–22</sup> In this context, another important—yet less extensively studied—determinant of individual willingness to make use of nutritional labels is represented by individual motivation to pursue health-oriented goals.

The economic framework of this paper was developed with the aim of exploring this latter aspect, focussing the attention on consumers' health orientation (HO) and its association with the frequency of use of nutritional labels. Health orientation is defined as individual motivation to engage in healthy attitudes, beliefs and behaviours, <sup>23,24</sup> and reflects the extent to which individuals value their own health. In other words, the higher the HO, the greater the individual willingness to engage in health investments, including diet-related investments. <sup>24</sup> This paper examined if high (low) HO is related to high (low) frequency of use of nutritional labels, which often represents the main source of information available to consumers when purchasing foods. <sup>9</sup> A better understanding of this relationship is relevant to extend current knowledge concerning the main

drivers of consumers' willingness to use nutritional information. More detailed characterization of consumers based on their individual characteristics (i.e. their motivation to pursue healthy behaviours) would aid the development of more effective information-based food policies that target specific population segments and would provide valuable insights for creating a supportive food environment favouring healthier food consumption.

This article is structured as follows: the next subsection describes the economic framework followed in this study, based on Grossman's model of the demand for health; the second section explains the details of data collection and the methodology applied; the third section provides the results and, finally, the article ends with a discussion of the results obtained, the limitations and the authors' suggestions for future research.

#### Economic framework

In the past, researchers have attempted to model the use of labels following different approaches.<sup>12,25</sup> Some of these attempts, such as that adopted by Drichoutis et al.,<sup>26</sup> have been based on Grossman's model of the demand for health.<sup>27</sup> This model is built around the proposition that health can be considered 'as a durable capital stock that produces an output of healthy time'.<sup>27</sup> The model assumes that individuals are endowed with an initial stock of health that is subject to depreciation over time and can be increased through investments.

On these grounds, the authors developed an economic framework in which the use of nutritional labels is considered as one of the possible investments that individuals can make to offset their health depreciation. To illustrate, consider the example of an individual who derives utility from his/her working time (W), his/her non-working time (F), his/her individual health condition (H) and the consumption of a bundle of other goods (G). This utility function can be written as:

$$U = U(W, F, H, G)$$
 [1]

According to Grossman, 27,28 the health component in Eq. [1] is a source of utility for the individual, as being in good health increases the productivity of working time and allows the enjoyment of a number of activities outside of work. However, Grossman's model also states that the individual health capital depreciates over time. In detail, 'it is assumed that individuals inherit an initial stock of health that depreciates over time—at an increasing rate, at least after some stage in the life cycle—and can be increased by investment. Death occurs when the stock falls below a certain level, and one of the novel features of the model is that individuals 'choose' their length of life'. 27 As such, in this model, health is not only demanded as consumption good to maximize the utility function but also produced by individuals through health-enhancing activities. Thereby, the health function can be expressed as:

$$H = H(I_H, \Omega) \tag{2}$$

where  $I_H$  corresponds to investments in health and  $\Omega$  represents a number of exogenous factors that can influence one's

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