

## **Logos on environmental sustainability in wine production: How do Burgundy consumers perceive them?**

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### **Keywords:**

Wine, Sustainability, Environmental friendly logos, Consumer perception

**Abstract:**

There is an increasing interest to reduce the use of pesticides in French agriculture, particularly in wine production. One of the strategies to encourage wine makers to pursue environmentally sustainable production practices is to increase consumers' interest in this type of wine.

Environmental sustainability is a credence attribute for consumers which involves a high level of uncertainty. Therefore, consumers' confidence plays a key role in the acceptance of environmental friendly wines, particularly due to the fact that premium prices are usually paid for this kind of product. For this reason, consumers can only choose to buy environmental sustainable wines if they are provided with understandable, trustable and accurate information.

Logos on environmental sustainability could provide an effective mechanism to help achieving the above mentioned goals. However, the large number of different logos on environmental sustainability available in the market raises the question of whether their associated messages are successfully conveyed to consumers.

In this context, the aim of the present study was to investigate how Burgundy wine consumers perceive a series of logos on environmental sustainability.

Fourteen logos available in the French market were selected. Twelve on environmental sustainability, three being specific to wine (Biodyvin, TerraVitis, Vignerons en développement durable), and nine being non-specific to wine (L'abeille sentinelle d'environnement, AgriConfiance, Demeter, former European organic-logo, new European organic-logo - launched in July 2010, French organic-logo, Haute valeur environnementale, Nature et Progress, NF Environment). Two other logos related to the origin of wine were used as references: the French logo for controlled designation of origin (AOC), and the French logo for protected designation of origin (AOP).

One hundred and twenty seven wine consumers from Dijon area (France) who bought wine and drank at least one glass per week participated in the study. Consumers were recruited according to three age groups: 20 to 35, 36 to 50, and 51 to 70 years old and balanced for gender. They completed a questionnaire with several questions, among them: "What does a bottle of wine with this logo suggest you?". Pictures of the logos were presented following a balanced incomplete design order, in which each participant evaluated seven logos.

Responses were grouped into different categories. Frequency of mention of the categories was determined for each logo. Chi-square test was used to identify significant differences among logos, whereas Correspondence analysis (CA) was performed to get a bi-dimensional representation of the logos. Cluster analysis was carried out to identify groups of logos that were similarly perceived by consumers.

Thirty-seven categories were considered in this analysis. At the aggregate level the most frequently elicited categories were: *unknown*, *organic wine*, *environment*, *compliance with standards*, and *without chemical products/additives*. The frequency in which the categories were elicited for the different logos significantly differed (chi-square=3071,  $p < 0.00001$ ), implying large differences in how consumers perceived them.

As expected, the French logos for controlled and protected designation of origin (AOC and AOP) were neither associated to the environment nor to organic wines. They were linked to the categories *compliance with standards*, *protected/delimited region or terroir* and *confidence*.

The logos that most successfully conveyed their messages were Biodyvin, the old European and the French organic logos. They were strongly associated with the category *organic wine*; whereas the last two were also perceived as indicating that wine had been made *without chemicals or additives*. Moreover, L'abeille sentinelle d'environnement, Haute valeur environnementale, NF Environment and Vignerons en développement durable were associated to *environmental issues*.

Some logos did not communicate a message related to environmental sustainability. Demeter, Haute valeur environnementale, and Nature et progress were perceived as *unknown* by a high percentage of consumers. In addition, the new European logo was associated with words related to *nature*, and most consumers considered it as an indicator that wine had been produced within the *European Union*.

Results from this exploratory study reaffirms the need to inform consumers about the message conveyed by logos on environmental sustainability and indicate the need for further research on this issue.