Ithaca 2018 Abstract Submission

Title
AN APPLICATION OF THE CHOICE-BASED CONJOINT ANALYSIS TO STUDY WINE CONSUMERS AND THE ROLE OF SUSTAINABILITY COMMUNICATION

I want to submit an abstract for:
Conference Presentation

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Keywords
wine; geographical indication; local; sustainable certification; choice model; Italian consumers

Research Question
This study is investing whether consumers might be willing to trade off the tradition quality cues of a wine (i.e. denomination of origin) for a sustainable attribute.

Methods
We chose to use Choice-Based Conjoint (CBC) analysis in which consumers are asked to select a product from a given set of alternatives. Attributes:: price, Geographical Indication, locality and sustainability

Results
A treatment regarding information about the meaning of the sustainable label was carried out for half of the participants. Preliminary results suggest significance difference between the two groups.

Abstract
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In the wine sector, sustainability has become a key issue in the global wine business and it embraces the aims to protect the environment and landscape, biodiversity and ecosystems, to manage water resources and the challenge of climate change. Moreover, to enhance the quality of the wine and its competitiveness, the International Organisation of Vine and Wine considers also as main priorities the management of economic resources and social aspects inside and outside the winery (OIV, 2014).
Recently the Italian wine sector, which is important for the agri-food business and widespread throughout all the

country, has seen private associations and consortia starting developing sustainable management of vineyards and their ecosystems. In 2011 the Italian Ministry of the Environment, Land and Sea developed a programme called V.I.V.A. Sustainable Wine, which established a common methodology for environmental, social and economic sustainability assessment using four indicators (Air, Water, Vineyard and Territory). In addition, wineries which are enrolled in this programme have the opportunity to use the logo with the indication of V.I.V.A. Sustainable Wine on the label of their products.

Along with all this increasing interest for sustainable production in the wine industry, there is no clear evidence whether such programmes lead to a growth in the value perception of the product and the relative Willingness to Pay (hereafter called WTP) for such characteristics. Moreover, as reported by Pomarici and Vecchio (2013), obtaining reliable information for new attributes such as environmental and social claims can be a difficult task. The specific objectives of this research is to determine and quantify the relative importance placed by consumers on specific key attributes associated with wine choices (GI, region of production and sustainability).

This study is a contribution to the current literature on wine preferences, especially investing whether consumers might be willing to trade off the tradition quality cues of a wine (i.e. denomination of origin) for a sustainable attribute, which is offered to the respondent through the presence of "V.I.V.A. sustainable wine" logo.

In the design of a conjoint experiment, one of the first and most crucial steps is to define the attributes and the levels that influence preferences and choices (Hair et al., 2010). In a wine decision-making process, sensory characteristics and price factors are not enough to guide the choice; consumers assess a broader range of information before a purchase. The number of attributes to consider for getting a realistic description of a wine product concept is very large. However, CA requires choosing a limited number of attributes to avoid information overload and at the same time to consider all the relevant characteristics to elicit consumer preference.

Based on literature review and preliminary focus groups (Sogari et al., 2013), four independent attributes qualifying the wine were decided to be used for our experiment: price, Geographical Indication (GI), region of production (Origin) and sustainable logo.

We chose to use Choice-Based Conjoint (CBC) analysis, considered the most widely used conjoint approach, in which consumers are asked to select a product from a given set of alternatives (choice set), simulating as much as possible the actual purchasing process. Each profile is a function of different attributes of product (including price) and each attribute (explicative variable) varies at different levels (Table 1). The collected preference information is used as a basis to estimate the part-worth utilities for each level. Each part-worth coefficient expresses the contribution of a particular level of an attribute to the total utility of a product when that level is present. The relative importance of an attribute can be defined as the weight that the consumer places on each attribute when selecting a product during the buying process.

Table 1. Experimental design attributes and levels

No. Attribute Levels
1 Price • till 3.00€;
• 3.10-5.00€;
• 5.10-7.00€
• >7.00€
2 Geographical Indication • DOC - the Controlled Origin Denomination
• None
3 Region of production • Produced in your region
• Not produced in your region
4 Sustainable label • VIVA - Sustainable wine logo
• None
Source: own elaboration

A "no-choice option" was added to every choice set to make the conjoint choice experiment more realistic. In this way the respondent is not forced to make a choice which might lead to less accurate predictions when analyzing the data.

Sawtooth Software Incorporated (SSI Web version 8.3.8), which is a software system for creating Web-based questionnaires, was used to generate an efficient full factorial design which includes all the possible combinations

of the attributes for each level. Four attributes, namely, price, Geographical Indication, region of production and sustainable label were tested.

Once the number of attributes and their levels are chosen, the design of the experiment is obtained. Orthogonality must be maintained which suggests no correlation between the attributes and independency from each other. A total of 32 possible profiles ($4 \times 2 \times 2 \times 2$) were identified. Based on the literature (Hair et al., 2010) it was considered that 8 choice set is a reasonable number of profiles to manage for the respondents without negative effects on the quality of the data due to respondent fatigue.

Each simulated choice set consisted of four wine bottles with each label characterized by attribute bundles with various attribute levels and a "no-choice option".

A web-based questionnaire was created using Sawtooth Software. The choice to use an on-line tool to collect data instead than a more tradition face-to-face choice experiment interview was supported from our need to have a sample of respondents from all Italian regions and not just from a limited geographical area. The wide web use spread among many Italian citizens of different age, regions and gender allows to trust in the online questionnaire tool.

Pilot studies have been carried out to improve the clarity of the questions and to evaluate the total duration of the questionnaire and adjustments have been done to allow a range of 8-10 minutes to fill in the survey.

From September to December 2014 the questionnaire was mailed out to a random sample of over 2000 households resident in all Italian regions and, after eliminating uncompleted answers and respondents who answer too fast, 495 completed and valid responses were collected (of which 250 respondents received information about sustainability). However, the sample is representative of our ideal target population which is composed by wine drinkers in Italy, segmented by region of residence, age and gender. Responses from participants who had consumed wine within the last month were considered valid.

The questionnaire starts with (1) a set of wine consumption habits patterns, (2) a set of importance of wine attributes, (3) the choice experiment, (4) a set of 8 candidate statements on sustainable wine labelling, and (5) a set of socio-demographic questions.

Wine consumption habits

How many times have you been drinking wine glasses in the last month?

The first question was the so called "filter question" which excluded all the respondents who have not drunken any glass of wine in the last month ("no one"). In this way we assured to have a sample of people who can be considered wine consumers based on their drinking habits in a recent period of time. At the same time we have a frequency of consumption in the last month which allowed us to segment our sample in daily ("one per day" or "more than one every day") or weekly ("one per week" or "3-4 times per weeks") wine drinkers.

Where do you usually buy wine?

The second question emphasizes on the place of purchasing. Max five possible answers were showed – as suggested from the literature – in order to facilitate the respondent; however an open question ("other") was allowed to specify any places not already indicated.

The location of purchasing is important because it might indicate the degree of experience with the product and leads to the identification and differentiation between experienced and deep involved consumers (buy "at the wineries" or "in a wine shop") and not much interested users ("at the supermarket" or "at the wholesale"). More difficult to categorize consumers who generally buy wine online. Such target might be purchasing wine directly from the producer' website or from a general online shop.

At what range of price do you usually buy a bottle of wine for your home consumption?

The last question on consumption habits wants to highlight the budget that a consumer spends on average for wine. Based on the price per bottle we can differentiate among consumers who spend a small amount of money ("up to 3€"), average ("3.10-5.00€" and "5.10-7.00") and higher budget ("more than 7.00€"). However, this data should be analyzed taking in consideration several socio-demographics parameters such as the revenue of the respondents and household size.

What attributes do you consider the most important for choosing a wine?

14 attributes which mostly influence the choice of a wine have been taken in consideration. Apart price and presence of discounts, the others can be classified among intrinsic (sensory characteristics, color) and extrinsic

wine features (brand name, grape variety, geographical indication, eco and social certifications, previous experience, etc.). At the end it was proposed an open question ("other") in which the respondents were free to specify any other personal factors. Some interesting answers have been given, such as the "year of production", "alcohol per volume" or "recommendation from wine guide".

This question has twofold objectives: (1) confirming (or not) the results of the choice experiment and (2) obtaining a measure of the importance of all other attributes which are not included in our CBC analysis.

In our CA experiment respondents are placed in a purchase context (Barjolle et al., 2013) asked to choose their preferred wine. To make the exercise more realistic and motivate the respondent's participation, in the online questionnaire it was created a layout which reminded a shelf in the shop with the image of several wine bottles on the background. The four alternatives were shown as images of bottle with their respective attributes on the label and the "no-choice" option (Figure 1). An image of the sustainable logo was used to illustrate the presence of this attribute on the label, as in the real market.

Figure 1. Example of screen shot of bottle's images

Source: own elaboration

A treatment regarding information about the meaning of the sustainable label was carried out for half of the participants.
Preliminary results suggest significance difference between the two groups.

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