



Using Discrete Choice Experiment to Measure Wine Tourists' Sensitivity for Winery Tours' Packages

Livnat BEN-NUN<sup>1</sup> Eli COHEN<sup>2</sup>

<sup>1,2</sup>Ben-Gurion University of the Negev, <sup>2</sup>University of South Australia

Introduction

Wine tourism is an on growing field in many countries accompanied by an increasing number of many small wineries and by an increasing wine consumption, mainly in emerging countries. Researchers pointed out few advantages that are driven from the wine tourism, especially for small wineries. These advantages include an opportunity for increasing sales, building brand loyalty and educating consumers about wine (Dodd, 1995). Furthermore, other researchers indicated that wine tourism stimulates the economic development in wine regions and increases the regional employment and tourism (Carlsen, 2004; Jaffe and Pasternak, 2004; Sanders, 2004).

Wine tourism was often considered as a part of an overall tour and includes a 'bundle-of-benefits' such as winery visit, wine tasting, enjoying scenery and participating in other local activities and attractions (Charters & Ali-Knight, 2000; Charters & Ali-Knight, 2002; Cohen and Ben-Nun, 2009; Dodd, 1995; Mitchell & Hall, 2004; Hall et al., 2000). This paper will focus mainly on the winery visitation and especially on benefits that potential visitors are expecting to receive from their visit in a winery. The main purpose of this paper is to explore the preferences of potential winery visitors regarding different winery package tours, and their willingness to pay for each package.

We used discrete choice experiment to determine the "utilities" of benefits in combinations and we asked the consumer to make a choice from a set of "bundle of benefits" or "package tours", and these choices are converted to 'utilities' for each of the levels of the individual attributes using multinomial logit (Louviere and Woodworth, 1983; Louviere, Hensher and Swait, 2000; McFadden, 1973).

Combinations of attribute were presented to potential consumers as a "package tour" in the winery during their visit. The package tour in the winery includes information (history, food and wine and wine making process), wine tasting, possibility of purchasing special products and price. Then, we measured the utilities of each attribute and level based on the consumers' choice of the different combination of attributes and the importance of each attribute. The next step was measuring the market share of each package tour, using the software market simulator, when a winery considers marketing several options of winery tour.

Method

A Conjoint Based Experiment (CBE) has been used for designing the winery package tours. Each winery package tour consisted of 4 attributes, and each attribute contained 2-3 levels. We chose to include the following attributes in each winery tour package: information given during the visit; a possibility to taste wine during the visit; a possibility of purchasing special wines from the winery; and different prices of the winery package tour (also called 'entrance fee'). As winery visitors are seeking for information during the visit, we considered using the following information categories (information 'levels'): winery history; combining food and wine; and wine making process. Wine tasting is also considered as an important attribute during a winery tour, and therefore 'yes' or 'no' options were offered. Purchasing special wines from the winery is considered as an attractive attribute from the consumers' point of view, and might increase the winery's direct sales and profits. Accordingly, 'yes' or 'no' purchasing special products options were offered. Regarding the entrance fee of the winery package tour, three options were considered: free entrance; 15 NIS (New Israeli Shekels) and 25 NIS (about 4 and 6 US\$, respectively). This range of prices was chosen since its common in Israel to pay for a winery tour up to 25 NIS (for a big winery). An example of a choice task is illustrated in Figure 1.

Figure 1: Sample Choice Task with options of Winery Package Tours

Assuming you are willing to visit in a winery. The visit includes a winery tour and additional options. Which one of these four options would you choose? If none of these options suit please chooses the option "I would choose none of the options".

Food and Wine info	History of the winery	Food and Wine info	I would choose none of these packages
No wine tasting	No wine tasting	Wine tasting	
No special products to purchase	Special products to purchase	No special products to purchase	
IS 15	No fee	IS 25	
1	2	3	4

Each participant received 8 choice tasks, and in each choice task respondents were asked to select their preferred "winery package tour" during their visit in the winery, out of a set of 4 winery tour packages. Three options represented different combinations of winery tour packages, and each package tour consisted of one level from each of the four attributes. These levels were randomised across 100 questionnaires that were generated by the Sawtooth Software's Choice-Based Conjoint Software (Sawtooth Software, 2000). This software has an algorithm which insures that each level of each attribute appears equally to the other levels across the questionnaires, and that a specific winery package tour combination would not appear again in the same questionnaire. In addition to the three winery package tours in each choice task, one option was a "none" option ("I would not choose any option"). This option was suggested in order to allow the participants to choose a "none" option when none of the offered winery package tours meets the respondents requirements.

Apart from the choice sets, the questionnaire included demographic questions (gender and age) and behavioural questions such as frequency of drinking wine and wine involvement (1-5 Likert-type scale). The data was collected in Israel during train's ride all over Israel (e.g. Tel Aviv, Beer Sheva, Haifa, Jerusalem and other main train stations in Israel). In this way, subjects from all over the country could take part in the survey. Only subjects aged 18 above could participate in the survey. Out of 100 valid questionnaires, 58 were male and 42 female. Twenty eight of the respondents were between the age of 18-24 years, 46 between 25-34 years, and 26 over the age of 34. Respondents were classified into two wine involvement categories: "high involved" and "low involved" and into two categories of wine drinking frequency: "low" (once in a month or less) and "high" (twice in a month or more) wine drinking frequency.

A logit analysis was carried out in order to estimate the main effects of the choice attributes, using the Sawtooth Software Choice-Based Conjoint multinomial logit program (Sawtooth Software, 2000). The same analysis was then performed by incorporating interactions between the attributes, in order to determine whether any interaction is significant. The analysis was also run for different segments: gender (male, female), age (18-24, 25-34, 35 years old and above), wine drinking frequency (low, high) and wine involvement (low, high).

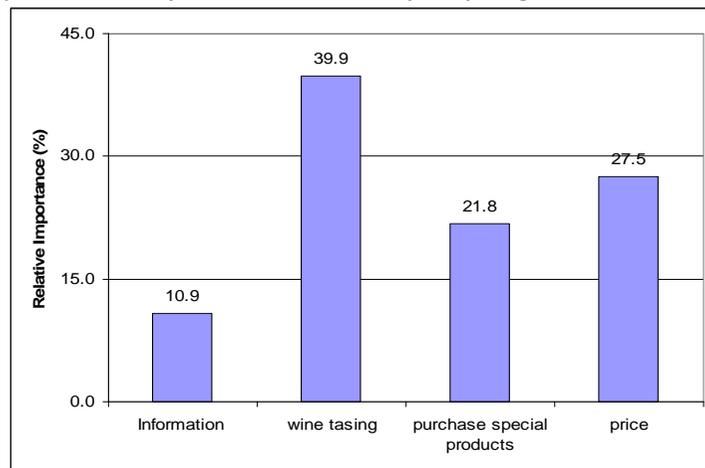
Results and Discussion

The first step of the analysis was measuring the utilities of each attribute and level. Then, each segment was run separately using the same multinomial logit analysis. The choice of which segmentation method was the best was made by calculating the amount of improvement in the log likelihood for each method when compared to the log-likelihood of the total sample (Louviere, Hensher and Swait, 2000). No significant improvement was observed using the segmentation based on gender, age, frequency of drinking wine and wine involvement.

Based on the attributes' utilities we estimated the importance level of each attribute. The estimation was made for the whole sample and for each segment separately. The attributes' importance in the

winery package tour is presented in Figure 2. Accordingly, the option to taste wine during the visitation is the most important attribute (39.9%) followed by price (27.5%). The least important attribute is 'information in the winery' (10.9%). Similar importance values were obtained for each segment, and no significant differences between the segments or the whole sample were obtained.

**Figure 2: Importance of winery tours attributes in winery tour packages**



From marketing and managerial point of view, it is important for the wineries to identify the most attractive winery package(s) tours that could be offered to the visitors. Therefore, we utilized market simulation technique that is provided by Sawtooth Software, using 'randomised first choice' algorithm in simulating our market shares. Market share simulation was then carried out by changing one attribute at a time, in order to understand the consumers' preferences of the attributes in the winery package tour. We used 3 winery package tours as a reference. These packages included three levels of information ('the history of the winery', 'food and wine combination' and 'wine making process'). In addition, they included the option to 'taste wine' during the visit and 'no' option to 'purchase special products' from the winery. These tour packages' entrance fee was 15 NIS. The fourth package tour option included information about 'combining food and wine', an option to 'taste wine during the visit', an option to 'purchase special products' from the winery and an entrance fee of '25 NIS'. The four different winery package tours and the market shares of each package are presented in Table 1. The entrance fee of the fourth winery package tours was then varied and the market share of each package was recalculated. It should be noted that the market shares that have been calculated are dependent on each other, and other results might be identified when a new or competitive package tour is taken in account. Comparison between packages 2 and 4 shows that there is no significant difference between the market shares of these two packages. It means that consumers are willing to pay an extra fee for the opportunity to purchase special products (and wines) during the visit in the winery. However, package 3 is the most preferred one with 43.78% of market share. Decreasing the entrance fee of package 4 to 15 NIS (applying similar simulation procedure) will increase its market share to 66.41% while package 3 would achieve only 16%. If changing package 4 to be a package without entrance fee, the market share will increase to 76.35% while package 3 will have only 10.95% of the market share, and packages 1 and 2 would achieve less than 10% separately.

**Table 1: Market share of four winery package tours**

Factor	Package 1	Package 2	Package 3	Package 4
Information in the winery	History	Food & wine	Wine making	Food & wine
An option to taste wine	Yes	Yes	Yes	Yes
Purchasing special wines	No	No	No	Yes
Entrance fee (IS)	15	15	15	25
Market share (%)	12.16	21.16	43.78	22.90

### Conclusions

The findings of this study are important in designing a marketing strategy for the wineries in order to attract winery visitors. However, as this study is exploratory and limited to a sample of 100 potential winery visitors, conclusions should not be extrapolated to the whole population. Furthermore, wineries should be aware of competition within the region and to the competitive products. The wineries can build alliances with other tourist operators in the region and offer a 'bundle of activities' with various attractions, and not only a single winery tour.

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