Progress in Agricultural Engineering Sciences 19 (2023) 1, 35–50
DOI: 10.1556/446.2023.00069

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Do we pay more attention to the label that is considered more expensive? Eye-tracking analysis of different wine varieties

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ORIGINAL RESEARCH PAPER

Received: June 20, 2023 • Accepted: August 25, 2023
Published online: September 21, 2023

ABSTRACT

In our study, using a combination of eye-tracking parameter analysis and the van Westendorp method, we investigate whether participants pay more attention to products that they perceive as more expensive or to those that they prefer in the ranking process. The experiment involved 50 participants, a questionnaire with ranking and pricing tasks, and an eye-tracking measurement. Three wine varieties (Irsai Olivér, Rosé and Merlot-Shiraz) and three different label alternatives were tested. When comparing the results of the ranking and the pricing tasks, the product that is considered more expensive is not always the one that is most appealing to the participants. If we compare the results from the analysis of the eye-tracking parameters and the pricing, we can say that in all cases the labels that received the most visual attention were those that were priced more expensively by the participants.

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KEYWORDS

eye-tracker, van Westendorp method, eye-movement, pricing

INTRODUCTION

Standing in front of the shelves in a shop, we often choose products with little or no prior information or knowledge. Previous research has shown that our decisions are made quickly – from a quarter of a second to a few seconds – so that beyond a cursory glance, limited information is gathered (Russo and Leclerc, 1994). The eye-tracker is an excellent tool for understanding such short decision times (Gómez-Carmona et al., 2021), as it captures parameters related to eye movements, thus allowing us to later understand the participants' gaze patterns. This data is provided by the eye-tracker software for the visual stimulus that is the focus of the study, including the areas we have selected. The selected regions are called Areas of Interest (AOIs). The tool is able to localize the position of the eye on the object under test, tracking the eye's movement from one location to another to determine the direction of gaze (Huang et al., 2013).

Attention is unconscious and divided in a matter of seconds, so the decision for food products is based on a glance at the label or packaging, requiring little energy investment from the consumer to search for information. Above all of these, the attention of the consumers is influenced by multiple factors, e.g. food color (Jantathai et al., 2013), saliency (Milosavljevic et al., 2012), music (Szakál et al., 2023), lights (Biswas et al., 2016) or scents (Szakál et al., 2022). In the world of wines, this is particularly true for infrequent consumers (Pomarici et al., 2016). The importance of visual stimuli is particularly important when buying wine, as product attributes that help us make a decision, such as colour, are masked by the wine bottle (Laeng et al., 2016), so the design of packaging and labelling is of the most importance. According to Reimann et al. (2010) aesthetic appreciation influences consumer preferences in terms of value, satisfaction and purchase intention. For wine labels, we can find research that investigates the relationship between fixation on the label and label preferences, which can be used to predict the decision (Laeng et al., 2016). In the case of wines, labels do not only contain specific information but also have the task of providing information about quality (Hall and Mitchell, 2008). When we look at a product, we form an image in our minds of whether it is of high or low quality. Furthermore, it has been presented that visual attention to wine labels correlates with preference (Barbierato et al., 2023).

There is a wealth of research on the study of wine labels, which can be mainly divided into two groups: wine labels e.g. (Celhay and Remaud, 2018) and bottle closure e.g. (Bekkerman and Brester, 2019). Orlowski et al. (2022) studied non-traditional wine labels and showed that non-traditional packaging negatively affects the purchase intention of wine through product appeal and taste perception. They also showed that consumer response to non-traditional packaging is a function of individual differences and label characteristics. Of course, we can also find research on organic labels for wines. Macht et al. (2022) find that organic labels are positively valued for most foods, but this is not so clear for wines. This may be due to the complexity of the product and consumer attitudes towards organic wines. A study in 2023 used an eye-tracker to investigate how consumers' visual attention to the design of wine labels correlates with preferences

(Barbierato et al., 2023). The measurement found a significant difference between labels and showed which one was preferred by participants, and a positive relationship between visual attention to a particular product label and the same product choice. In addition to the product label, there are also warning labels for wines, such as the pregnancy warning label used in France. Lacoste-Badie et al. (2022) used an eye-tracker to study such labels. Their results show that participants were almost inattentive to the actual label used, but that a larger, more colourful label combined with a pictogram was more eye-catching and they suggest modifications accordingly. There is also research on the nutrition labelling of wines, such as Popovich and Velkova (2023), which investigated how consumers perceive the nutrition labelling of wines and how this affects their perception of the healthiness of wines. Their results showed that sugar content had a greater impact on health perceptions than calorie content. In addition, changing the portion size moderated the effects (Popovich and Velikova, 2023).

For the launch of a new product or the repackaging of an existing product, there are methods of pricing that can be used to determine what customers think would be the optimal price for the product. We can determine the optimal price of a new product using direct and indirect methods. The advantage of direct methods is that they are easy to collect and require little prior knowledge from respondents. However, they have the disadvantage that, although little prior knowledge is required, if the price of a new product is very unusual, respondents may not know which price range is appropriate. Direct methods are based on the estimation of the willingness to pay (WTP). The simplest approach to price research consists of asking consumers to directly express their WTP for a given product in the form of open-ended questions. Respondents answer the question: what is the highest price you would be willing to pay for the product? A modified version of the WTP is the so-called incentive-linked WTP, in which participants are obliged to purchase a product if the price drawn in a lottery is less than or equal to their stated WTP. As there is real money at stake, respondents are encouraged to provide a realistic WTP (Breidert et al., 2006). Indirect methods are generally more accurate than direct methods because respondents are faced with more realistic scenarios. They are quick and easy to apply and also provide information on why respondents decided not to purchase a product. One such method is the Gabor-Granger approach. This is a convenient and practical pricing technique to determine the highest price a respondent is willing to pay for a given product (Wedel and Leeflang, 1998). In this approach, the price levels to be tested are first determined. Then a sample of respondents is collected and the product is described to each respondent, together with a price randomly selected from a predefined list. Respondents are asked whether they would be willing to buy the product at the given price (for example, on a 5-point scale, from definitely would to definitely would not). If the respondent is willing to buy the product at this price, the product is shown again, but this time at a higher price randomly selected from a predefined price list, and the respondent is asked if he/she is willing to buy. If the respondent is not willing to buy the product at the price shown the first time, the product is shown again, but at a lower price randomly selected from a predefined list, and the respondent is asked about his/her willingness to buy. This sample is repeated several times with lower and higher prices from the predefined price point list until the highest price the respondent is willing to pay is determined. The GG model is suitable for new product development. Its objective is to determine the maximum price that each respondent is willing to pay for a given product using a set of predefined price points, usually 5 or 7. One such method is the van Westendorp method, which is based on the assumption that there is a reasonable price for consumers in each category

and at each perceived quality level within each category, and that there is a lower and upper bound on the price that the consumer is willing to pay for the product (Lipovetsky et al., 2011). The Van Westendorp method uses a variety of price sensitivity models (van Westendorp, 1976). The first is the Point of Marginal Cheapness (PMC), which is the price at which consumers start to think a product is "too cheap." At this point, customers may associate low prices for dropped value or quality (Kim et al., 2012). This idea emphasises the psychological phenomenon whereby absurdly low prices may discourage buyers. Recognising this point enables businesses to avoid pricing their products below market value (Kupiec and Revell, 2001). The Point of Marginal Expensiveness (PME) is the price at which consumers deem a product to be "too expensive." Consumers may hesitate as a result of perceived overpricing as prices rise because perceived value could decrease. To avoid pricing their products out of the reach of potential customers and maintain a competitive edge, businesses must be aware of this information (Kim et al., 2012). Additionally, there are Optimal Price Points (OPP), which represent the equilibrium at which a product's perceived value and benefits are equal. Currently, consumers assess the price to be reasonable given the expected benefits (Kim et al., 2012). This price point is referred to as the "sweet spot" because it maximises sales and revenue while still having customers perceive value (Kupiec and Revell, 2001). Last but not least, the Indifference Price Point (IPP) is the cost at which customers are undecided about whether to buy the product or not. Consumer doubt about the product's value in relation to its price is reflected in this inflection point. Understanding the IPP enables businesses to determine the crucial price range that might influence a consumer's decision to buy (Kim et al., 2012).

The Van Westendorp method uses four specific questions for collecting data (Kim et al., 2012); 1. "At what price would you consider the product to be so expensive that you would not consider buying it?" This question determines the PME; 2. "At what price would you consider the product to be priced so low that you would feel the quality couldn't be very good?" This question identifies the PMC; 3. "At what price would you consider the product starting to get expensive, so that it is not out of the question, but you would have to give some thought to buying it?" This aids in determining the upper range of consumer willingness to pay; 4. "At what price would you consider the product to be a bargain—a great buy for the money?" This question contributes to understanding the lower boundary of consumer price acceptance.

Information into how consumers view pricing can be gained from analysing the responses to these questions, which also aids in creating efficient pricing strategies. The van Westendorp method'/s simplicity and capacity to accurately capture general consumer sentiments without requiring direct trade-off decisions are its main advantages. Some researchers use the van Westendorp methods on price sensitivity models, such as in the variations of algae-based meat substitutes, where researchers believe the analysis of the van Westendorp method can be a useful tool in the early stages of product design to minimise the high slide rates of product innovations in the food retail industry (Weinrich and Gassler, 2021). When researching consumer perception and their willingness to buy Karoo lamb, Weissnar and du Rand (2012) used the van Westendorp method. By using the method, studies discovered that non-Karroo lamb consumers were willing to pay a higher price than Karoo lamb consumers. Last but not least, researchers used the van Westendrop method to assess the potential price range for bioactive food additives, given the increasing demand, research revealed a potential price range for these products (Haydn et al., 2014).

We already know from previous research that participants most often choose the product on which their eyes spend the most time (Orquin and Mueller Loose, 2013), but do we pay more visual attention to the product that is perceived as more expensive? Is there a difference between the data analysis of eye-tracking parameters and the results of the ranking? The aim of this study is to answer this question by using the van Westendorp method and the analysis of eye-tracking parameters. On this basis, we want to draw conclusions as to which products the winery should market.

MATERIALS AND METHODS

Eye-tracking measurement

The measurement was carried out at the Buda Campus of the Hungarian University of Agriculture and Life Sciences in a room of about 18 m^2. The location and design of the room were ideal for the measurement, which eliminated unwanted disturbances. The table was placed in the centre of the room. Participants were recruited at the Buda Campus. A total of 53 participants (20 males, 33 females), with an average age of 28.64 years (SD = 2.96), took part in the measurement. A total of 3 participants had to be excluded from the analysis due to low (<80%) eye-tracking quality. Sixty-eight percent of the participants buy wine weekly and 23% monthly. 46% drink wine several times a month and 28% several times a week.

During the study, eye movements were recorded with the Tobii Pro Nano (Tobii Pro AB, Danderyd, Sweden), a desktop type eye-tracker that can be attached to a monitor. The images were displayed to participants using Tobii Pro v.1.171 (Tobii Pro AB, Danderyd, Sweden) software.

After the participant entered the room, he/she was asked to take a seat in front of the computer monitor and was given a brief explanation of the task to be performed and how to do it. After the briefing, the eye-tracker software was started, which firstly checked whether the participant was sitting in the correct position, i.e. whether his/her eyes were at the right distance (60–65 cm) from the eye-tracker and whether he/she was sitting too high or too low. If the position was not recorded correctly the first time, the participant was asked to change his/her body position. Once the correct position was found, a 9-point calibration was started. After a successful calibration, a timeline (Fig. 1) was started containing the visual stimuli that were the focus of the study. The first slide contained the description that was used to present the task. After the reading, the participant could press a key on the keyboard to jump to the next slide, which had a cluster of grapes, acting as a fixation cross, placed in the top right corner. Usually, a

Fig. 1. A part of the timeline (content of the slides from left to right: informative text, "fixation grape", visual stimuli)

fixation cross appears before each visual stimulus, and is designed to make each participant's gaze start from the same point when the visual stimulus appears. However, in our case, the fixation cross was changed to a picture of a grape. The grape icon appeared for only 2 s, after which the software automatically moved on and displayed the first product photo. All participants had unlimited time to view the product photo. After visualising the product, the participant could press a key to move to the next slide, which was again a "fixation grape." The process was repeated until all the product alternatives had been viewed by the participants, i.e. a total of 9 products could be viewed. The final step of the measurement was to complete a questionnaire.

Visual stimuli

The visual stimuli used in the measurement were provided by Podmaniczky Vineyard and Winery in Balatonföldvár. A total of three wine products (Irsai Olivér, Rosé and Merlot-Shiraz) were tested with different label alternatives. Photos of these products are shown in Fig. 2.

Questionnaire

In addition to gathering demographic data, the questionnaire was also used to determine the optimal price for the different label alternatives in the study and to rank the labels by variety. The questions were asked according to the principles of the van Westendorp model. Van Westendorp data is often evaluated graphically by evaluating cumulative distribution function crossings. The points of marginal cheapness (PMC), point of marginal expensiveness (PME), indifference price point (IPP), and optimal price point (OPP) are interpreted. First, the PMC represents the lower bound of an acceptable pricing range, whereas the PME represents the

Fig. 2. Visual stimuli used in the measurement (v = version)

upper bound. Thus, price below the PMC leads in a loss of image and revenue, whereas pricing above the PME results in a loss of sales. Second, the IPP is the price at which an equal proportion of respondents judge a product as "cheap" or "expensive." The IPP indicates the consumer's reference price, which is either the median retail price or the price of a significant market leader. Third, the OPP is the price at which sales and market share are maximized, because there are an equal number of respondents who describe the product as "too cheap" or "too expensive" (van Westendorp, 1976). The model seeks to answer four questions, which are:

- "cheap" question: for the product shown in the picture, what price do you consider so cheap that you would buy the product immediately?
- "expensive" question: for the product shown in the picture, what is the highest price you would consider expensive but would still buy the product?
- "too cheap" question: for the product in the picture, what is the price at which you think the product is so cheap that it is no longer suitable because of its quality?
- "too expensive" question: for the product shown in the picture, what price do you consider so expensive that you would not buy the product?

For each product alternative, participants were asked to provide a price for each of the four questions. Based on the prices, the method can be used to determine the optimal price at which the product under consideration should be sold. For more information on how the model works, see Lipovetsky and Conklin (2020).

Data analysis

The van Westendorp price sensitivity model is a procedure to collect data on the acceptable price of product innovation and includes a simple graphical procedure to find the optimal price. For each product, participants answered four questions on price (see Questionnaire section) and then the optimal price was determined using MS Excel 365 (Microsoft, Redmond, Washington, USA).

When completing the questionnaire, participants were also asked to rank the wines by labels. The results of the ranking were analysed using the Kruskal-Wallis test. STATISTICA version v.10 (Statsoft Inc., Tulsa, Oklahoma, USA) was used for the analysis.

Further statistical analysis was performed on the eye-tracking parameters extracted from the eye-tracker measurements, which were as follows (Gere et al., 2021):

- Time To First Fixation (TTFF, the time elapsed between the stimulus presentation and the first fixation of the user's gaze on the alternative, [s]);
- First Fixation Duration (FFD, [s]);
- Fixation Duration (FD, total duration of fixations on the alternative, [s]);
- Fixation Count (FC, number of fixations on the alternative, [n]);
- Dwell Count (DC, the number of visits to a priority area, [n]);
- Dwell Duration (DD, the length of time between the participant's first fixation on the product and the next first fixation outside the product, [s]).

The analysis of the above parameters was also performed using STATISTICA v.10 (Statsoft Inc., Tulsa, Oklahoma, USA), and analysis of variance (ANOVA) was used. In order to analyze the eye-tracking parameters, AOIs (Areas of Interest) were first assigned for each product. The following AOIs were assigned (Fig. 3):

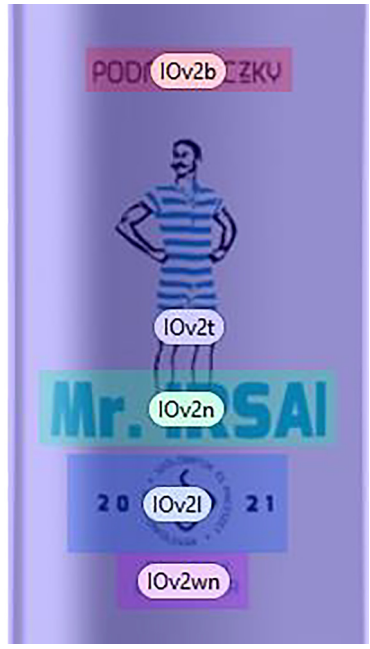

Fig. 3. Example of AOIs selected in the analysis,
Indicates: IO = Irsai Olivér, v2 = second version, b = brand, t = full label, n = fantasy name of the product, wn = name of the wine type, l = winery logo

- brand (the Podmaniczky inscription);
- the fantasy name of the products;
- the winery logo and
- the name of the wine type.

Data extracted from the eye-tracker software were analysed using analysis of variance (ANOVA). First, the Irsai Olivér, Rosé and Merlot-Shiraz product alternatives were treated together and analysed for each AOI to determine which eye-tracking parameters showed significant differences. Where a difference was observed, further analysis was performed (Tukey test). Subsequently, the product alternatives of the AOIs were compared. In this case, the method of analysis was the same as described above. All tests were done at $\alpha = 0.05$ level.

RESULTS

Ranking

Based on the results of the Kruskal-Wallis test (Table 1), there is a significant difference for Irsai Olivér and Merlot-Shiraz products, but not for Rosé products. The ranking of the participants showed that Irsai Olivér v2 and Merlot-Shiraz v3 were the best alternatives. A visual illustration of the ranking results for all wines is provided in Fig. 4. The graph clearly shows that for Irsai Olivér and Merlot-Shiraz, the 1st and 2nd ranked wines have the same graphic, i.e. the graphic

Table 1. Ranking results using Kruskal-Wallis test (* indicates significant difference at $P < 0.05$ level)

Irsai Olivér ($P^* = 0.00002$)			Merlot-Shiraz ($P^* = 0.02282$)			Rosé ($P = 0.20598$)		
Rank	Version	Results of KW	Rank	Version	Results of KW	Rank	Version	Results of KW
1	v2	1.6400	1	v3	1.7600	1	v2	1.8000
2	v1	1.8400	2	v1	1.9400	2	v1	2.0600
3	v3	2.5200	3	v2	2.3000	3	v3	2.1400

Indicates: v = version, KW = Kruskal-Wallis test.

Fig. 4. Ranking results illustrated with visual stimuli

that is most attractive to the participants and presumably the alternatives that would attract the most attention if they were on the shelves of the shops.

Van Westendorp method

Using the van Westendorp model, the optimal price for each alternative was determined and is summarised in Table 2. To illustrate the graphical representation, we use the selected alternative for Irsai Olivér labelled v1 (Fig. 5). The table shows that the optimal price for the three alternatives for Irsai Olivér is v1, for Rosé v2 and for Merlot-Shiraz v1 and v3, which is the price at which each product would be worth selling.

Table 2. Optimal prices for all the products under consideration (HUF) using the van Westendorp model

	Irsai Olivér	Merlot - Shiraz	Rosé
v1	1,600	1,400	1,300
v2	1,300	1,300	1,450
v3	1,100	1,400	1,400

Indicate: v = version

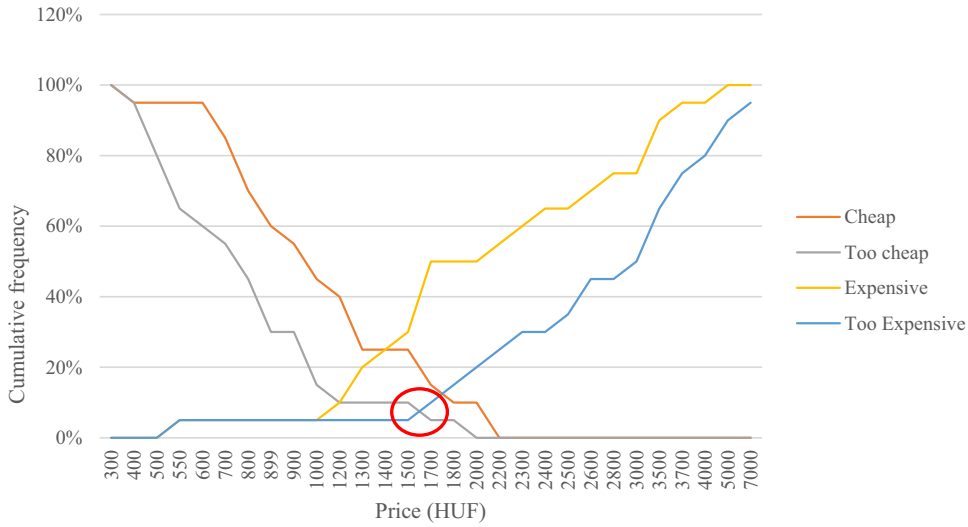

Fig. 5. The optimal price was determined using the van Westendorp method for the Irsai Olivér v1 alternative. The red circle indicates the optimal price

Eye-tracking parameters

The statistical analysis of the eye-tracking parameters was performed for each AOI separately for 3–3 alternatives of the 3 wine varieties. When examining the effect of gender, we found that men and women had similar attitudes towards the labels of each product, so there was no significant difference between the genders ($F(12,848) = 9.349$, $P = 0.4815$). Table 3 shows the results of the AOI with brand labels together with the labels of the homogeneous groups. A one-way ANOVA revealed that there was a statictically significant difference between the products ($F(12,848) = 20.825$, $P = 0.0000$). For the Irsai Olivér label alternatives, it can be seen that

Table 3. Post-hoc test results of the brand AOI eye-tracking parameters

	FD_brand	FC_brand	DD_brand	DC_brand
Irsai Olivér v1	0.4 ± 0.61b	15.58 ± 8.45a	0.46 ± 0.7b	1.08 ± 1.2a
Irsai Olivér v2	0.1 ± 0.17a	0.44 ± 0.68b	0.1 ± 0.17a	0.42 ± 0.65b
Irsai Olivér v3	0.1 ± 0.21a	13.63 ± 8.71a	0.1 ± 0.22a	1.04 ± 0.2a
Merlot-Shiraz v1	0.21 ± 0.41a	0.79 ± 1.32b	0.22 ± 0.42a	0.67 ± 1.1a
Merlot-Shiraz v2	0.08 ± 0.18a	0.29 ± 0.65a	0.08 ± 0.19a	0.21 ± 0.41a
Merlot-Shiraz v3	0.09 ± 0.27a	0.21 ± 0.58a	0.09 ± 0.28a	0.17 ± 0.43b
Rosé v1	0.29 ± 0.53a	0.77 ± 0.97ab	0.29 ± 0.54a	0.63 ± 0.73ab
Rosé v2	0.29 ± 0.58a	0.94 ± 1.45b	0.3 ± 0.59a	0.73 ± 1.05b
Rosé v3	0.08 ± 0.18a	0.31 ± 0.55a	0.08 ± 0.19a	0.29 ± 0.5a

Indicates: FD = Fixation Duration; FC = Fixation Count; DD = Dwell Duration; DC = Dwell Count; v = version.

the alternatives labelled v1 and v3 belong to the same group with respect to the FC and DC parameters, and do not differ significantly from each other. However, this is not the case for the FD eye-tracking parameter, where the alternative labelled v1 is significantly different from the alternatives labelled v2 and v3. For the Merlot-Shiraz labels, there is a significant difference for the FC and DC parameters: for the former, the v1 alternative and for the latter, the v3 alternative are significantly different from the other two alternatives. For the Rosé products, there is no difference between the three label alternatives for the FD and DD parameters, while for the FC and DC parameters, the alternatives labelled v2 and v3 are significantly different from each other and the alternative labelled v1 is not significantly different from the other two alternatives. For the brand AOI, the alternatives labelled Irsai Olivér v1, Rosé v2 and Merlot-Shiraz v1 received the most visual attention.

Table 4 shows the results of the analysis of the eye-tracking parameters of the AOI with the Podmaniczky Winery logo. A one-way ANOVA revealed that there was a statictically significant difference between the products ($F(12,848) = 10.214$, $P = 0.0000$). For the Irsai Olivér products, the alternative with the highest visual attention, except for the FC parameter, is the alternative labelled v2, and this alternative is significantly different from the other two alternatives. For the Rosé labels, it is clear that the alternative with the v2 label received the most visual attention when looking at the logo AOI. This label is also significantly different from the other alternatives. The same can be said for the Merlot-Shiraz labels, where the v2 alternative received the most attention.

Table 5 shows the results from the analysis of the AOIs containing the fantasy name of each alternative. A one-way ANOVA revealed that there was a statictically significant difference between the products ($F(12,848) = 2.1723$, $P = 0.01136$). From the table, it can be said that a significant difference is only observed between the alternatives of the Irsai Olivér, where the alternative labelled v1 received the highest visual attention for all parameters except the FD parameter.

Finally, the results of the AOI with the wine variety name are presented in Table 6. A one-way ANOVA revealed that there was a statictically significant difference between the products ($F(12,848) = 2.3463$, $P = 0.0704$). According to the results, the alternatives with the highest visual attention were Irsai Olivér v1, Rosé v2 and Merlot-Shiraz v1.

Table 4. Post-hoc test results of the eye-tracking parameters of the logo AOI

	FD_logo	FC_logo	DD_logo	DC_logo
Irsai Olivér v1	0.37 ± 0.63a	1.17 ± 1.63b	0.38 ± 0.66a	1.85 ± 1.47a
Irsai Olivér v2	0.79 ± 0.83b	2.4 ± 2.15a	0.85 ± 0.88b	2.63 ± 1.7b
Irsai Olivér v3	0.73 ± 0.8ab	2.58 ± 2.24a	0.33 ± 0.43a	1.56 ± 1.15a
Merlot-Shiraz v1	0.22 ± 0.33a	0.69 ± 0.9a	0.22 ± 0.34a	0.56 ± 0.68a
Merlot-Shiraz v2	0.74 ± 0.76b	2.52 ± 2.38b	0.79 ± 0.81b	1.35 ± 1.08b
Merlot-Shiraz v3	0.22 ± 0.31a	0.73 ± 0.84a	0.22 ± 0.31a	0.65 ± 0.73a
Rosé v1	0.35 ± 0.47a	1.15 ± 1.09a	0.36 ± 0.48a	0.85 ± 0.77a
Rosé v2	0.77 ± 0.78b	2.35 ± 2.15b	0.8 ± 0.81b	1.44 ± 1.44b
Rosé v3	0.29 ± 0.41a	0.73 ± 0.92a	0.3 ± 0.42a	0.58 ± 0.65a

Indicates: FD = Fixation Duration; FC = Fixation Count; DD = Dwell Duration; DC = Dwell Count; v = version.

Table 5. Post-hoc test results for the AOI eye-tracking parameters of the wine fancy name

	FD_fantasy name	FC_fantasy name	DD_fantasy name	DC_fantasy name
Irsai Olivér v1	0.82 ± 0.72a	3.35 ± 2.55a	0.95 ± 0.78ab	1.85 ± 1.01a
Irsai Olivér v2	0.95 ± 0.86a	3.08 ± 1.99a	1.03 ± 0.9b	0.95 ± 0.78ab
Irsai Olivér v3	0.32 ± 0.42b	0.85 ± 1.07b	0.55 ± 0.88a	1.23 ± 1.29b
Merlot-Shiraz v1	1.03 ± 1.18a	4.15 ± 4.45a	1.16 ± 1.4a	1.98 ± 1.59a
Merlot-Shiraz v2	0.95 ± 0.74a	3.75 ± 2.38a	1.04 ± 0.81a	2 ± 1.09a
Merlot-Shiraz v3	0.9 ± 0.76a	2.92 ± 2.23a	0.95 ± 0.8a	1.81 ± 1.33a
Rosé v1	0.82 ± 0.7a	3.38 ± 2.48a	0.92 ± 0.83a	1.9 ± 1.12a
Rosé v2	0.86 ± 0.78a	3.15 ± 2.41a	1.92 ± 1.13a	0.13 ± 0.32a
Rosé v3	1.08 ± 1.26a	3.27 ± 3.21a	1.18 ± 1.34a	1.63 ± 1.35a

Indicates: FD = Fixation Duration; FC = Fixation Count; DD = Dwell Duration; DC = Dwell Count; v = version.

Table 6. Post-hoc test results of the AOI eye-tracking parameters of the wine variety name

	FD_wine name	FC_wine name	DD_wine name	DC_wine name
Irsai Olivér v1	0.55 ± 0.59a	1.54 ± 1.2a	0.57 ± 0.61a	1.17 ± 0.93a
Irsai Olivér v2	0.13 ± 0.4b	0.27 ± 0.71b	0.14 ± 0.41b	0.23 ± 0.56b
Irsai Olivér v3	0.52 ± 0.85a	1.63 ± 1.97a	0.47 ± 0.8a	1.04 ± 1.17b
Merlot-Shiraz v1	0.6 ± 0.85b	1.69 ± 2.02b	0.61 ± 0.87a	1.06 ± 1.17a
Merlot-Shiraz v2	0.26 ± 0.55a	0.81 ± 1.89a	0.28 ± 0.59a	0.42 ± 0.71b
Merlot-Shiraz v3	0.44 ± 0.65ab	1.1 ± 1.24ab	0.44 ± 0.66a	0.9 ± 0.9a
Rosé v1	0.48 ± 0.99a	0.14 ± 0.33a	0.4 ± 0.76a	0.93 ± 0.88a
Rosé v2	0.66 ± 0.75b	2.02 ± 2.15b	0.68 ± 0.77b	1.42 ± 1.29b
Rosé v3	0.31 ± 0.51a	0.71 ± 0.92a	0.31 ± 0.52a	0.65 ± 0.84b

Indicates: FD = Fixation Duration; FC = Fixation Count; DD = Dwell Duration; DC = Dwell Count; v = version.

DISCUSSION

Wine is a complex product, which has forced researchers to use different tools to understand how consumers choose wine. When a new product hits the shelves, consumers have to decide whether or not they are willing to pay what the shop is selling it for and whether or not to try the wine, without any prior information, just based on the label. This is why the choice of label is extremely important. Lockshin et al. (2006), for example, found that a gold medal as a symbol increasing the likelihood of choice most, but especially in the lower and middle price ranges, and that a well-known region is more likely to increase the desirability of small brands than big brands. Mueller et al. (2010) have researched the importance consumers attach to claims on the back of wine bottles when choosing wine. Their results suggest that the impact of label information on choice is of huge importance. Laeng et al. (2016) described a strong positive relationship between eye fixation on the label and the degree of label preference, as

more than 2/3 of fixations were caused by label preference, which allows us to predict which product an observer will choose based on gaze. Comparing our ranking results with the data measured with the eye-tracker to the results of the present study, we can say that the products that received the highest visual attention were also ranked first. Men's and women's wine choices are motivated differently, with women relying more on brand and previous experience, while men rely on region and previous knowledge (Ferreira et al., 2019). However, we are not aware of any study that reports a significant difference between gender and wine label preference.

CONCLUSIONS

Based on the results obtained using different methods, it can be said that among the different label alternatives for Irsai Olivér, the product considered the most expensive – the alternative labelled v1 – received the most visual attention, with the exception of the logo AOI, however, the high visual attention does not necessarily mean higher acceptance or purchase intent. However, in the ranking, the participants ranked the v2 alternative as the most appealing. In the case of the Irsai Olivér products, the product rated as the most expensive received the most visual attention. For each of the Rosé alternatives, it is clear that the v2 labelled alternative, which was considered the most expensive, received the most visual attention and was also ranked first. Thus, for this wine, it can also be said that the label considered the most expensive attracted the most visual attention. Looking at the results of the Merlot-Shiraz wine, it can be seen that the most expensive wine in the pricing exercise was awarded to two alternatives (v1 and v3), with the alternative with the v1 label attracting the most visual attention, so that the more expensive product attracted the most attention. If we compare the results of the ranking and the pricing, we can see that only Rosé was ranked first, whereas the results for Irsai Olivér and Merlot-Shiraz were different. What this means is that the label that appears most expensive is not always the one that consumers prefer. Overall, therefore, the combination of the three methods can be an ideal way of deciding which alternative a producer should market. A promising future direction would be to identify consumer clusters (Gere, 2023) (e.g. segments) to identify if the presented preference order is stable across the consumers or not. As it has been earlier demonstrated that different mindsets prefer different products (Porretta et al., 2019), approaching different consumer groups with different lables might increase sales.

ACKNOWLEDGEMENTS

Dorina Szakál thanks the support of the Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences. Abdul Hannan Bin Zulkarnain thanks the support of the Doctoral School of Food Sciences. Supported by the ÚNKP-22-3-I New National Excellence Program of the Ministry for Innovation and Technology from the source of the National Research, Development and Innovation Fund.

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