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Enriching product exposure in e-commerce through a hedonistic and utilitarian cue

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Abstract. With the projected growth in the global wine market, the ongoing impact of the COVID-19 pandemic, and the increasing prevalence of e-commerce, a pressing need arises to devise unique and engaging ways to present product offerings. While prior research has shed light on the potential of online sales platforms for wineries and the role of wine bottle labels in influencing consumer purchasing behavior, scant attention has been given to the presentation of wine products in the realm of e-commerce. Therefore, the primary objective of this study is to examine the impact of including visual cues (symbols) in online product displays on individuals' perceptions of the product and their likelihood to make a purchase. Specifically, we aim to investigate how the placement of elements related to wine consumption, such as a 'Glass', and the representation of the product's raw materials, such as a bunch of 'Grapes', affect consumer purchasing choices. The results from a simulated online wine store demonstrate the substantial influence of including a 'Glass' symbol on consumers' selections. Furthermore, a series of eye-tracking laboratory experiments conducted in Poland, involving a total of 140 participants, provides deeper insight into underlying mechanisms. These findings reveal that augmenting a wine product with a hedonic symbol, such as a 'Glass', significantly enhances consumer perception of the product. Additionally, it exerts influence on their 'Product Attitude' and 'Product Taste' assessment, both of which are integral components of product perception. This study has the potential to offer valuable insights for wine marketers, e-commerce retailers and researchers specializing in the field of consumer behavior and marketing. Beyond the wine industry, the implications of this research extend to other sectors that rely on e-commerce platforms for sales.

Keywords: e-commerce, wine marketing, hedonistic cue, utilitarian cue, eye tracking.

1. INTRODUCTION

In our rapidly evolving digital landscape, characterized by the swift consumption of web content and the emergence of online businesses as well as educational platforms, there is an increasing demand for improved customer

usability [1]. While e-commerce offers a vast array of options for filtering and categorizing products, enriching product presentations, it also presents a challenge due to the overwhelming amount of product information in catalogues, often leaving customers bewildered. To address this issue, product cues have emerged as a valuable solution. Additionally, advancements in sensor technology, such as eye trackers, now enable us to capture users' attention during shopping experiences, providing valuable insight with regard to consumer interest in products [2].

The COVID-19 pandemic had profound repercussions on the global wine industry, reshaping consumer behavior and market dynamics [3]. In addition to its immediate health impact, the pandemic has induced two significant effects on the wine market. Firstly, it has disrupted the supply chains for high-value wine products, leading to decreased availability [4]. Secondly, lockdown measures in various countries have altered the consumption landscape, limiting opportunities for wine consumption in traditional settings such as restaurants, and encouraging the proliferation of e-commerce platforms [5]. Notably, online, mobile and virtual channels for wine purchases have steadily gained ground [6]. This shift prompted wine producers to invest in online channels to sustain their businesses during the crisis, accelerating the ongoing digitization trend [7]. In the USA, online wine sales, which accounted for only 5% in 2019, surged dramatically during the 2020 lockdown, growing by a staggering 198% in terms of USD sales [8]. Projections indicate that online wine retail sales in the USA may reach 75% by 2025, as demonstrated via the time regression-based model proposed by Huq et al. [9].

In previous research, such as the work by Jiang and Benbasat [10], it has been confirmed that functional mechanisms, including vividness and interactivity, play pivotal roles in influencing the efficacy of online product presentations. Moreover, Pavlič et al. [11] have explored advanced technological perspectives on interactive product placement, highlighting its significance in online brand integration. Consumer attitudes and purchase intentions are greatly influenced by online product presentation, just as they are in traditional retail [12]. However, despite the ability to modify product displays in e-commerce, wine presentation has not received adequate research attention.

Wine is a uniquely multifaceted product on the food market, with attributes such as provenance, ratings and sustainable production practices gaining prominence. Choosing the right wine, while considering numerous attributes, often requires a high level of expertise that only a minority of consumers possess [13]. This leads to the critical question: Can enhancing product presentation through the inclusion of symbolic elements improve consumers' perception of wine products and, consequently, increase their willingness to make a purchase?

Our study contributes to the expanding body of research on food and beverage consumption as well as marketing practices in e-commerce. It is essential to acknowledge the complexity of this domain, as the question of which quality cues matter most to consumers remains elusive [14]. In our study, it is specifically explored how wine cues impact consumer behavior in the e-commerce setting, bridging the gap between traditional food-related research and the unique context of purchasing wine online.

2. THEORETICAL FRAMEWORK

To understand the dynamics of consumer preferences and decision-making within the context of the wine market, it is essential to draw upon theoretical frameworks. The Cue Utilization Theory, developed by Olson and Jacoby [15], posits that consumers rely on various cues, including product attributes and informational stimuli, to assess the quality of food products. This theory suggests that specific cues may exert varying degrees of influence on purchase decisions depending on individual profiles and product characteristics [16]. Complementing this perspective, the Stimulus, Organism, Response (S-O-R) theory by Jacoby [17] emphasizes the role of external stimuli in shaping individuals' actions.

2.1. Hedonic and utilitarian factors in consumer behavior

Consumer behavior is intricately influenced by the interplay between hedonic and utilitarian aspects of products, shaping their purchasing decisions and preferences. D'Astous et al. [18] emphasize that effective sales promotion strategies often hinge on consumers perceiving both hedonic and utilitarian benefits in the products they consider. Batra and Ahtola [19] offer a fundamental distinction, defining the hedonic dimension as related to emotional and sensory experiences, while the utilitarian dimension is focused on the instrumental or functional value a product provides. In the realm of e-commerce, where physical product experiences are limited, as highlighted by Mallapragada et al. [20], these characteristics gain even more significance.

Exploring this further, Liao et al. [21] delve into online impulse purchasing behaviors, uncovering that enhancing product involvement and web interface quality triggers positive emotions and fosters impulsive buying decisions, particularly in the case of utilitarian prod-

ucts. Bettiga et al. [22] venture into neuroscience, revealing disparities in emotional responses to functional and hedonic products. They note that unconscious emotions, generated by functional products, may not be consciously recognized, while a profound correlation exists between physiological and self-reported arousal for hedonic products. Basso et al. [23] shed light on the role of time pressure in purchase decisions, showcasing the susceptibility of utilitarian purchases to its effects. Wang et al. [24] note that perceived deception has less detrimental impact on the intention to repurchase hedonic products compared to utilitarian ones, suggesting strategies to enhance repurchase intentions for e-tailers.

It is important to recognize that the effectiveness of promotion strategies, as discussed by Kronrod et al. [25], varies based on whether a product is perceived as hedonic or utilitarian. For example, while one-for-one promotions may enhance purchase intentions for utilitarian products, they can undermine them for hedonic products [26]. These recent insights into hedonic and utilitarian purchasing dimensions underscore their critical role in shaping consumer behavior, particularly in the context of online shopping, where sensory experiences are limited. Understanding the interplay of these dimensions is pivotal for businesses seeking to tailor their marketing strategies and optimize product presentation in the dynamic landscape of e-commerce.

2.2. Visual presentation of wine

Visual presentation, particularly wine labels, stands as a central determinant of consumer behavior on the wine market [27]. Research underscores its significance through various dimensions. Label design elements such as color play a substantial role in wine pricing, with clean or specially-designed labels commanding price premiums and warm colors prompting price discounts [27]. Semiotics, as explored by Celhay and Remaud [28], unveil how consumers perceive characteristics through contrasts and oppositions, forming a visual language of wine labels. Consumer reading patterns of wine bottle labels differ depending on experience, significantly impacting purchase intentions [29]. Gender-based differences in label perception have been highlighted, with women gravitating toward front label information and men emphasizing back label descriptors [30]. Age and experience also play a part, with young and less experienced wine consumers tending to focus on the label, giving more attention to front labels than back ones [31,32].

The introduction of health warnings on alcoholic beverage labels has regained prominence in consumer studies. Kokole et al. [33] have observed that existing labels, such as pregnancy logos or responsibility messages, are suboptimal, often going unnoticed or not fully understood. However, their real-world, long-term labeling intervention have demonstrated that alcohol health warning labels designed to be prominently visible and containing novel, specific information hold potential as part of an effective labeling strategy. In this context, Annunziata et al. [34] discovered that the inclusion of a logo illustrating the consequences of alcohol on the brain diminishes consumer utility. Similarly, Staub et al. [35] found that while health warning labels increase the perception of certain risks, the effect size remains modest. These dimensions collectively emphasize the pivotal role of visual presentation in shaping consumer choices and preferences in the wine industry.

The shift towards e-commerce in wine sales is evident, with a notable increase in online wine sales [36]. The examination of cues influencing wine purchasing decisions in an online context is gaining importance, particularly in mature markets with substantial potential for growth and technological innovation [37]. Research by WMC [38] highlights the significance of positive online wine purchase experiences in cultivating repeat buyers. This aligns with the perspective underlined by Wang et al. [39], from which consumers, faced with growing information asymmetry on the online market, consider alternative signals when assessing Product Quality.

Research is scarce concerning the effects of different online wine presentation features on consumers' purchasing intentions. This is mostly in regards to the proportion between picture and words (e.g. [40]), perceived authenticity [41], photo or video preference [42], information asymmetry [43], social influence and cues [44,45], presentation on social media [46], ascending or descending order of wines, sorted by quality [47], website design [48], etc. Nonetheless, to the authors' knowledge, the arrangement of picture elements for online wine presentation has only been researched in extremely rare cases. Our research gap regards the potential to influence perception through the modification of the context and presentation of products in e-commerce. The central focus of this study is encapsulated in the following research question:

(RQ): What impact does the inclusion of a visual cue in online product displays have on individuals' perceptions of the product and their propensity to make a purchase?

3. METHOD

Our research aims to assess the impact of additional elements on product perception in e-commerce. To

achieve this, we conducted a series of complementary studies using diverse methods, including varying levels of psychological realism and gathering both declarative as well as eye-tracking data. We employed eye-tracking data to identify disparities in participants' focal points within the product area. As Hwang et al. [49] have highlighted, eye-tracking studies offer advantages over self-reports for understanding attitudes and behaviors, providing valuable insights into information processing, recall and attention.

In the initial study (Study 1A), a between-group online questionnaire was employed to examine how cues influence the perception of different product attributes. Subsequently, Study 1B took place in a controlled laboratory environment, ensuring consistent exposure times and uniform product presentations. It is important to note that both studies used the same stimuli—a single bottle of a no-name white wine with or without a cue—making the second study an extension of the first. According to Maehle et al. [50], the food sector traditionally categorizes products into two main types: hedonic and utilitarian. Hedonic are those consumed primarily for sensory pleasure rather than addressing hunger or physiological needs, while utilitarian are chosen mainly for their functionality and ability to satisfy hunger. In our proposal, we suggest that symbols, such as a 'Glass,' can be used to encourage hedonistic consumption, whereas cues alike 'Grapes', may signal a more utilitarian choice.

The second series of studies (2A, 2B, 3A, 3B) involved a laboratory test with higher psychological realism, incorporating the use of an eye-tracker to collect additional data.

A total of 80 individuals, recruited from university students and staff members (20 participants in each variation), participated in this study. They were asked to indicate their preference between products A and product B using a seven-point bipolar scale.

Our ethical consent process was thorough and comprehensive. We provided participants with clear and detailed information about the study's objectives, procedures, potential risks and benefits. Emphasizing the voluntary nature of participation, individuals were assured they could withdraw their consent at any time without consequences.

To acknowledge participants' time and effort, we provided compensation in the form of gift cards.

Importantly, we maintained strict data privacy and confidentiality measures to safeguard participants' personal information. We confirm that our research obtained approval under Resolution No. 14/2022 from the Research Ethics Committee at Poznań University of Economics and Business for scientific research involving humans at PUEB.

Study 1A

The first experiment employed a cross-group design, with participants randomly assigned to one of three conditions. To maintain consistency, three stimuli were created, all based on the same wine bottle with a blurred label. These stimuli included a photo of a wine bottle without any additional elements ('Control'), a bottle of wine with a bunch of grapes ('Grapes'), and a bottle of wine with a glass next to it ('Glass').

Data was collected through a web-based survey, involving a sample of 366 individuals based on convenient selection. The participants were distributed across the 'Control' (121 people), 'Glass' (123 people), and 'Grapes' (122 people) groups. On average, the participants were 38 years old (SD = 12.15, min = 18, max = 75), and the group represented a diverse demographic (Table 1). The study targeted adults who reported alcohol

Table 1. Respondents' characteristics.

Factor		Frequency
Gender	Female	57%
	Male	42%
	Other /prefer not to say	0%
Education	Less than a high school diploma	0%
	High school degree or equivalent	22%
	Bachelor's degree	51%
	Master's degree	21%
	Doctorate	1%
	Other	4%
Household income (USD)	<= 19,999	5%
	20,000-29,999	13%
	30,000-39,999	8%
	40,000-49,999	13%
	50,000-59,999	18%
	60,000-69,999	10%
	70,000-79,999	12%
	80,000-89,999	7%
	>=90,000	13%
Status	Employed full-time	69%
	Employed part-time	10%
	Retired	3%
	Self-employed	7%
	Student	2%
	Unable to work	1%
	Unemployed	8%

Table 2. CFA results.

	Item	Statements: *This product is ….*	Loading	*p*-value	Cronbach's α	CR	AVE
PA	PA1	Unappealing / Appealing	0.86	***	0.96	0.96	0.82
	PA2	Bad / Good	0.89	***			
	PA3	Unpleasant / Pleasant	0.92	***			
	PA4	Unfavourable / Favourable	0.93	***			
	PA5	Unlikable / Likable	0.94	***			
PQ	PQ1	Of high quality	0.89	***	0.89	0.89	0.74
	PQ2	Valuable	0.90	***			
	PQ3	Expensive	0.78	***			
PT	PT1	Tasty	0.93	***	0.91	0.92	0.8
	PT2	Delicious	0.94	***			
	PT3	Aromatic	0.79	***			

PA – Product Attitude, PQ – Product Quality, PT – Product Taste.

consumption based on screening questions, irrespective of frequency or preferences, but with a controlled preference for the product category (WWF – white wine preference) on a seven-point Likert scale ('I like white wine').

After participants viewed one of three different wine product images without any time constraints, they answered questions about the given variables: Product Attitude (PA), Product Quality (PQ) and Product Taste (PT) using a five-item construct on a seven-point bipolar scale for PA and a three-item Likert scale for PQ and PT. The Product Attitude scale was adapted from Spears and Singh's [51] approach to measuring attitude towards brand. Meanwhile, Product Quality was adapted based on Sun et al. [52]. Perceived Quality Value items, and Product Taste was adapted from sensory analysis proposed by Gasiński et al. [53] to be used for beer evaluation.

To maintain data integrity in our online questionnaire, we implemented extra precautions, including attention checking questions. Participants failing to provide accurate responses to these checks, those exposed to the stimulus for less than three seconds and individuals among the top 25% with the fastest response times to all questions (indicating potential superficial reading) were excluded from the analysis.

The conducted Confirmatory Factor Analysis (CFA) validated the research tool's reliability, with a loading area of 0.79, Cronbach's α and Composite Reliability (CR) above the recommended 0.7, and Average Variance Extracted (AVE) above 0.5 (see Table 2). The Heterotrait-Monotrait (HTMT) values were all below 0.9 for each pair of variables. In Study 1A, one-way ANCOVA was performed across three groups, controlling participants' general preferences with regard to white wine.

Study 1B

In the subsequent study, experimental conditions of the initial study were replicated and the same stimuli was used ('Control', 'Glass', 'Grapes'), but with modifications. Participants were exposed to the stimuli for a fixed duration of five seconds, the duration determined on the basis of data analysis from the first study. The trial was conducted in a controlled Consumer Research Laboratory with a constant temperature of approximately 22°C and lighting levels maintained at around 740 lx.

Unlike the first study, participants in this trial were presented with stimuli on a uniform device—a high-resolution (4K), 27-inch monitor with excellent color reproduction, meeting RGB standards with 99.8% accuracy. Due to COVID-related restrictions, the study was limited to 60 participants authorized to be present at the University and its laboratory. The participants were primarily university students and administrative employees, randomly assigned to three groups of 20 people.

In addition to the question about preferences for white wine (WWP), participants were asked about three issues: Willingness to Try (WWT), Willingness to Buy (WWB), each measured by one statement, and Urge to Buy, measured by three statements (e.g. 'I experience a sudden urge to buy this wine'), following a similar approach to that proposed by Szymkowiak [54].

Study 2A and 2B

After obtaining inconsistent findings in our initial investigations (studies 1A and 1B), we conducted a more comprehensive series of laboratory tests. In total, eight

experiments were carried out, with four focused on red wine (Product A) and four on champagne (Product B).

Graphics resembling an online wine store's screenshot were prepared to facilitate the study. Two parallel screenshots were simultaneously displayed on a 27-inch monitor within a single view. Before primary assessment, participants spent a few minutes in the room to adapt their eyesight to the artificial lighting. Subsequently, the eye-tracker was calibrated at nine different points to ensure accurate data collection.

These trials were aimed at investigating the influence of cues such as a 'Glass' (Study 2A and 2B) and Grape cluster (Study 3A and 3B) on consumer behavior. The positioning of the cues was randomly assigned to either the left (Variant 1) or the right (Variant 2) side of the product.

In Study 2A, participants were instructed to select their preferred red wine, while in Study 2B, they were asked to choose their preferred champagne. To maintain consistency and reduce variables, each product pair was deliberately designed to be visually similar. Additionally, the product descriptions indicated that both options belonged to the same wine type, originated from the same country and were priced identically. This approach was targeted at ensuring psychological realism while minimizing external influences.

In both studies 2A and 2B, an additional 'Glass' element, symbolizing hedonic consumption, was introduced alongside one of the bottle photos. To account for the potential impact of screenshot placement on the participants' product choices (either on the right or left side of the screen), we employed an experimental design. The independent variable, represented by the 'Glass' element, was systematically placed either on the left (variant 1) or the right side (variant 2) in two distinct groups.

Study 3A and 3B

The objective of Studies 3A and 3B was to replicate the fundamental impact of an additional cue on product preference within the context of purchasing decisions. In these variations, the introduced element consisted of a cluster of 'Grapes', symbolizing utilitarian consumption. The general study design is illustrated in Figure 1.

4. RESULTS

Analysis revealed a significant difference in Product Attitude depending on the presence or absence of an accompaniment next to the bottle ($F(2, 362) = 3.152$, $p = 0.44$, $\eta^2 = 0.013$). Post-hoc analysis showed that the 'Glass' version significantly increased Product Attitude compared to the control ($t(364) = 2.463$, $p = 0.038$, $d = 0.316$), with no other significant differences observed. A similar pattern was found for Product Taste, indicating a main effect ($F(2, 362) = 3.539$, $p = 0.3$, $\eta^2 = 0.012$), with the 'Glass' version enhancing the perception of taste ($t(364) = 2.412$, $p = 0.043$, $d = 0.309$). However, no statistically significant differences in Product Quality Perception were identified on the basis of the additional element on the bottle ($F(2, 362) = 0.657$, $p = 0.519$).

In Study 1B, despite the smaller sample size, stronger main effects were observed. Analysis of covari-

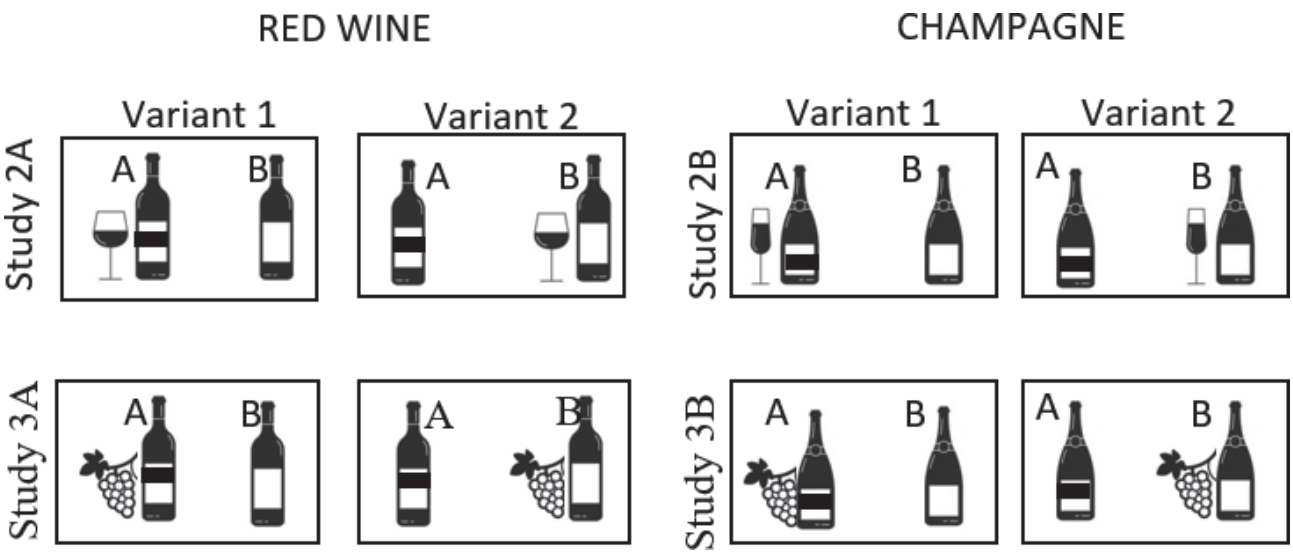

Figure 1. Study 2A, 2B, 3A, 3B scheme.

ance indicated that the presence of an accompaniment affected the Urge to Buy ($F(2.57) = 3.661$, $p = 0.032$, $\eta^2 = 0.114$). Specifically, a significant difference was found between the control version (M = 1.9, SD = 1.119) and that with the bunch of 'Grapes' (M = 3.0, SD = 1.298, $t(59) = 2.68$, $p = 0.028$, d = 0.837). The version with a 'Glass' (M = 2.65, SD = 1.496) showed a medium-level effect (d = 0.571), but was not statistically significant in this sample ($t(59) = 1.806$, $p = 0.171$). Willingness to Try (WTT) did not reach statistical significance ($F(2.57) = 2.244$, $p = 0.115$, $\eta^2 = 0.073$), likely due to larger standard deviations across variables. Notably, a significant effect was observed for Willingness to Buy ($F(2.57) = 6.27$, $p = 0.003$, $\eta^2 = 0.18$), with the bottle featuring a bunch of 'Grapes' (M = 3.75, SD = 1.446) significantly outperforming the control (M = 2.25, SD = 1.164, $t(365) = 3.5$, $p = 0.003$, d = 1.107) and indicating a large effect size. A visual representation of the means across all variables measured in Study 1A and 1B can be found in Figure 2.

In Study 2 (both 2A and 2B), we examined whether changing the location of the 'Glass' affected product preference. In Study 2A, participants using a seven-point scale showed a higher preference for product A (bottle with hedonic cue) in Variant 1 (M = 2.8, SD = 2.042). In Variant 2, the preference was for product B (product with a hedonic cue), (M = 4.65, SD = 1.461). These values were significantly different, indicating a large effect size ($F(1.38) = 10.861$, $p = 0.002$, $\eta^2 = 0.222$). For the champagne choice (Study 2B), the product with the added 'Glass' was also preferred ($F(1.38) = 5.560$, $p = 0.024$, $\eta^2 = 0.128$), despite the variant. See Figure 3 for a visual representation of these findings.

The analysis of results showed a trend in product preference with the bunch of 'Grapes', but it did not reach statistical significance for wine in Study 3a ($F(2.38) = 0.933$, $p = 0.340$, $\eta^2 = 0.024$), with a small effect size. In Study 3B, the results were not entirely conclusive, as a medium effect size was achieved at the significance level

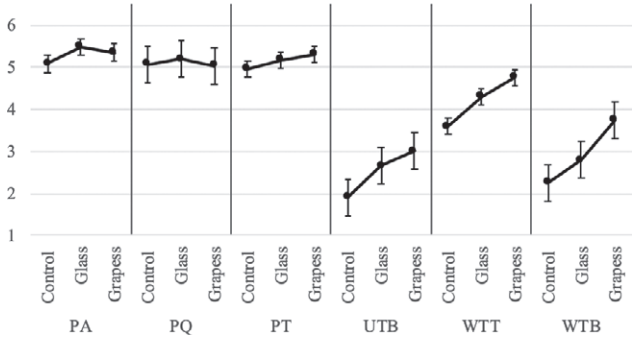

Figure 2. Results from Study 1A and 1B.

Figure 3. Results from study 2A and 2B.

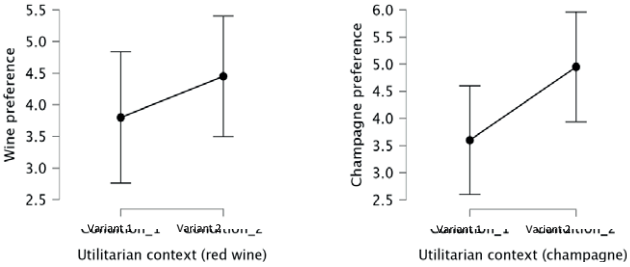

Figure 4. Results from study 3A and 3B.

Table 3. AOI product image time view (in seconds).

	Variant 1		Variant 2	
	Product A	Product B	Product A	Product B
Study 2A	3.52 (9.06)	2.19 (8.33)	1.9 (8.19)	2.29 (8.45)
Study 2B	4.15 (7.31)	3.47 (6.97)	3.55 (7.63)	4.38 (8.36)
Study 3A	2.81 (9.4)	2.17 (8.01)	2.9 (9.57)	3.32 (8.57)
Study 3B	3.39 (7.22)	2.71 (7.38)	2.8 (6.61)	3.31 (7.52)

Note: The values in parentheses apply to the entire e-product card.

of $p = 0.054$ ($F(2.38) = 3.941$, $\eta^2 = 0.094$). A visual representation of these results is presented in Figure 4.

Based on the data obtained from measuring eye movement, a quantitative and qualitative comparison can be made. The fixation time on the product area (photos) and the entire product card could be compared by plotting the Area of Interest (AOI). In Appendix 2, an example of the AOI determination area is provided for Study 2B in both scenarios. For better clarity, separate graphics indicate areas that would partly overlap. In Table 3, the aggregate times are demonstrated for all variants, products and different conditions. The data allow to indicate that in each of the eight cases, a photo containing an additional element attracted the consumer's attention for a longer time. Out of eight compilations

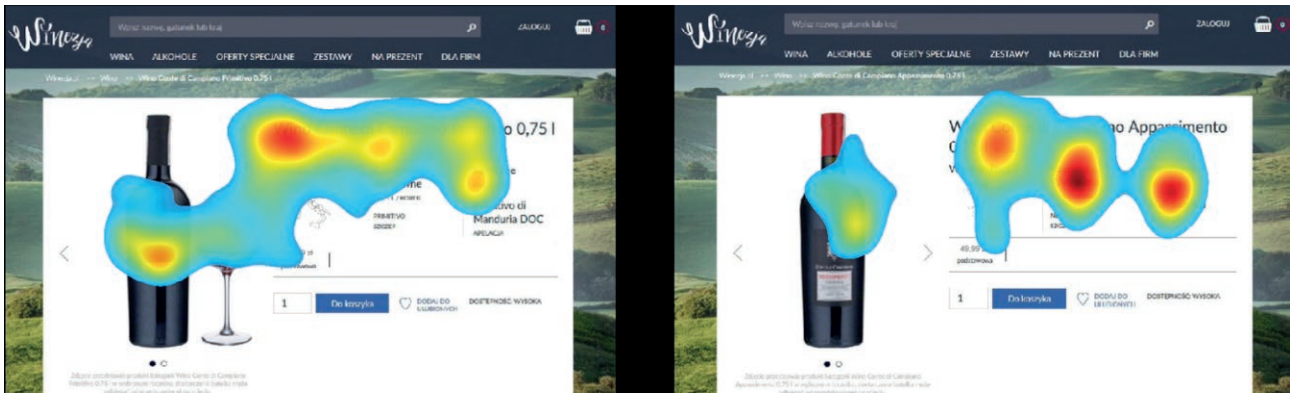

Figure 5. Study 2A (variant 1).

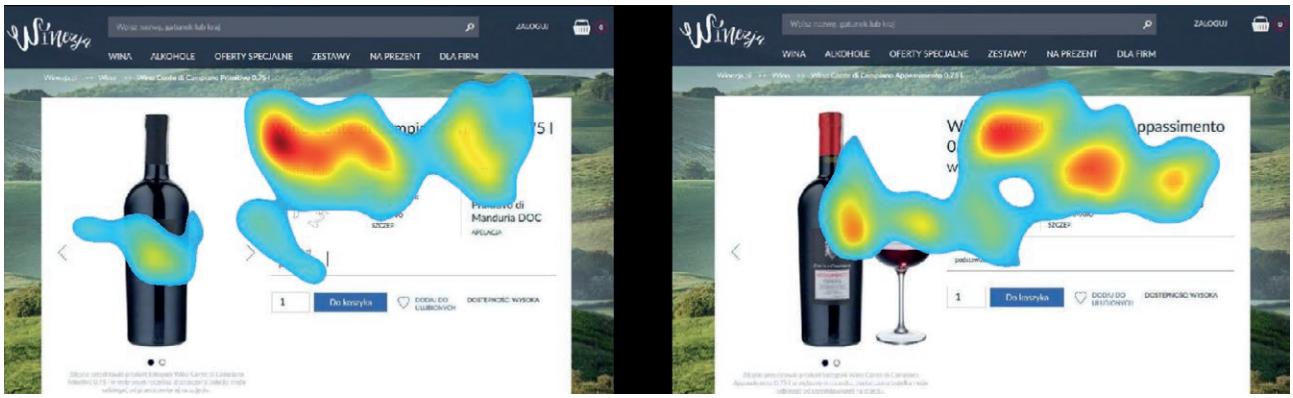

Figure 6. Study 2A (variant 2).

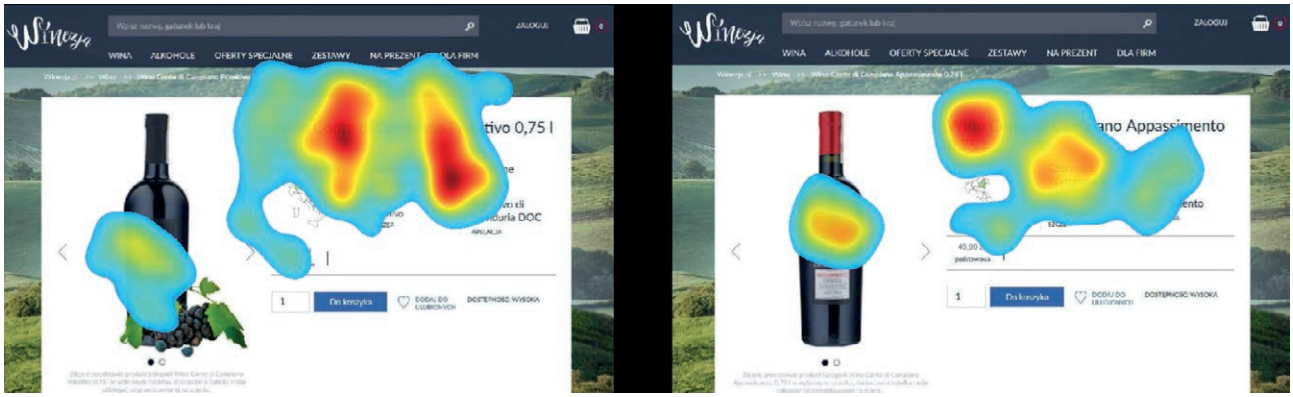

Figure 7. Study 3A (variant 1).

concerning the observation time of the entire product sheet, only in two cases (Study 3A, variant 2 and Study 3B, variant 1) was the length not in favor of the product for which the image was reinforced by an additional element. This is particularly important within the context of the results regarding the previously presented preference analysis.

The qualitative analysis of fixation and the graphical representation in the form of heat maps indicate that the element ('Glass') itself was not the dominant ele-

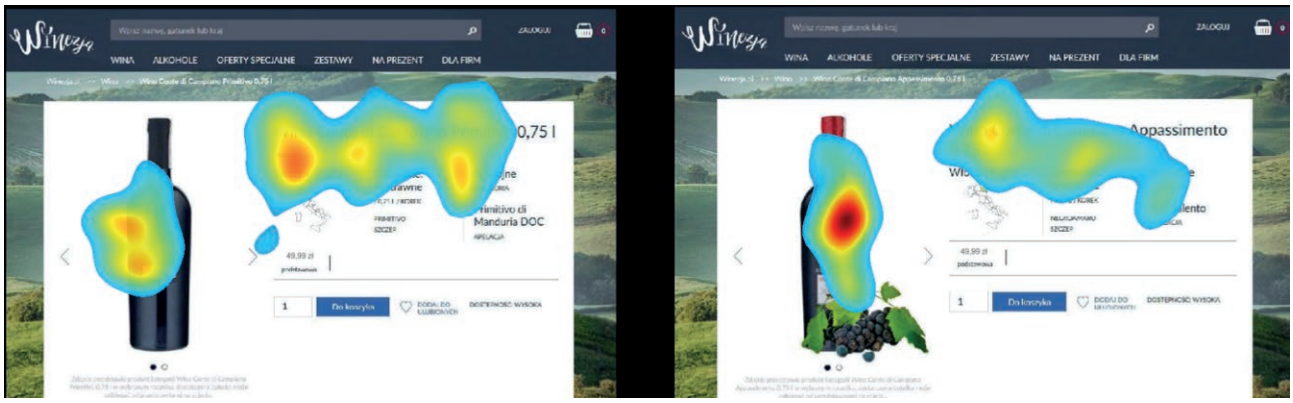

Figure 8. Study 3A (variant 2).

ment attracting attention of the respondents (see Figures 5 and 6). In the case of 'Grapes' (Figures 7 and 8), the respondents even neglected this element, maintaining a peripheral perspective.

5. DISCUSSION

The aim of the current research is to determine the influence of additional symbols, whether hedonic or utilitarian, as cues stimulating wine purchase decisions within an e-commerce context. As expected, the results of Study 1A demonstrated that associating a wine product with a 'Glass' symbol (considered hedonic) enhances product perception. Differences between the 'Control' and 'Glass' condition groups emerged in terms of Product Attitude (PA) and Product Taste (PT). Notably, both PA and PT appraisal are components of product perception linked to an affective dimension. This aligns with the idea that wine, primarily consumed for hedonic purposes, may be influenced by an individual's hedonic orientation. Hedonic-oriented wine choices often prioritize sensory experiences, which can dominate when consumers seek emotions and pleasure.

Interestingly, the 'Grape' symbol, often associated with utilitarian aspects such as grape type, origin or harvest, did not significantly affect taste assessment. Instead, it was the 'Glass' cue that influenced taste perception, possibly due to its connection with consumption. However, neither the hedonic nor utilitarian symbol significantly impacted perceived Product Quality. Given that both attitude sub-dimensions usually influence behavioral intentions, as seen in research, e.g. by Lee and Yun [55] on organic food purchase intentions, we decided to refine our approach.

Considering that young consumers often view wine as a social product driven by hedonic motives, we explored Urge and Willingness to Buy in addition to product assessment. In Study 1B, we replicated the experiment in a more controlled environment. Fernandes et al. [56] suggest that hedonic motives trigger buying processes and shape consumer attitudes, while utilitarian motives are linked to functional value in online shopping. Analysis of variance revealed statistically significant results only for the 'Grape' cue in terms of Urge to Buy (UTB) and Willingness to Buy (WTB), compared to the control group. These findings align with the research results achieved by Habann [57] indicating a preference for utilitarian characteristics in German online wine shops.

However, it is essential to note that participants in the control group, in general, poorly assessed the presented product, possibly due to lack of information. This could lead to decision reluctance even with the addition of a cue to a simple product. Subsequent trials were designed to test whether these factors interact differently with more complex imagery. We introduced greater psychological realism by using an online wine purchasing website and assessing consumers' final decisions regarding products with and without cue preferences.

When participants had to choose between two products, our analysis revealed that changing the location of the 'Glass' cue modified preferences, making the product more attractive. The addition of the hedonic cue resulted in longer fixation times, both for the entire product image and the Area of Interest ('Glass' cue sign). A similar effect was observed with the 'Grape' symbol, although it did not reach statistical significance. Further research in this area is recommended, particularly when the 'Grape' symbol is positioned to the left of the bottle, where shorter observation times were observed. This could be attributed to factors such as color, size or contrast of the grape symbol with the bottle.

Table 4. Findings summary.

Study number	Study characteristic	Main findings
Study 1A	Online study with a no-name white wine bottle + cue, assessing general wine preferences.	The Glass cue significantly improved attitude and taste perception, with no difference in quality perception.
Study 1B	Lab study with a no-name white wine bottle + cue, focusing on buying intentions.	The Grapes cue increased the urge to buy and willingness to buy significantly, with no significant medium effect for the Glass cue.
Study 2A	Lab study on red wine in e-commerce environment, testing preference changes with a hedonic cue location.	Participants showed a preference for the product with Hedonic cue, demonstrating a large effect size.
Study 2B	Lab study on champagne in an e-commerce environment, testing preference changes with a hedonic cue location.	Preference for the product with the Hedonic cue showed a medium effect size.
Study 3A	Lab study on red wine in an e-commerce environment, testing preference changes with a utilitarian cue location.	No significant preference change was observed for wine with the Grapes cue.
Study 3B	Lab study on champagne in an e-commerce environment, testing preference changes with a utilitarian cue location.	A medium effect size was observed for champagne preference with added cues, nearing significance.

It is worth noting that studies investigating the hedonic and utilitarian presentation of the same products, as in Mundel et al. [58], have yielded inconclusive results. In some trials, it has even been suggested that the effect of an evoked context on hedonic responses may not be universal. Therefore, our research attempts to address this gap in the literature by assessing the importance of cue symbols.

6. MANAGERIAL IMPLICATIONS

In today's rapidly evolving digital landscape, characterized by the swift consumption of web content and the rise of online businesses and educational platforms, user usability assumes a paramount role. Our findings suggest that online wine sellers, as well as producers and marketers of food and drink products, should consider the efficacy of labels in reducing consumer skepticism and providing convenient choices in e-commerce.

In recent works, hedonic responses (i.e. liking) have been increasingly acknowledged, but a deep dive into sufficiently understanding consumer perceptions has not yet been undertaken [59]. Interestingly, even in the case of seemingly hedonic products, online marketers should pay special attention to the utilitarian characteristics of their shop [57]. Importantly, as demonstrated by Fenko et al. [60] consumers tend to be more skeptical toward hedonic labels compared to health-related ones, suggesting that consumer reactions to product claims may be influenced by potential verification of the claim. Moreover, these authors indicate that the influence of consumer skepticism on product experience, product evaluation and purchase intention varies according to different product categories. For hedonic products, such as chocolate cookies, the hedonic label had a more positive effect on consumer responses compared to the health label.

With the plethora of cues and claims on the market, the most critical question is whether and how these signs affect consumer choices. As shown in our research, the hedonic cue positively influences preference for the marked product. Therefore, when customers compare offers from different sellers, this factor may be a deciding factor. Furthermore, it can be successfully applied to any product and does not require significant modifications. In the case of utilitarian cues, such as awards or certificates, proper justification must be provided.

When consumers are driven by utilitarian motives during online shopping, their primary goal is to efficiently find the right product without spending excessive time searching and evaluating alternatives. Therefore, it is crucial to carefully design utilitarian cues that are easily comprehensible to customers. This is of particular significance because it has been shown in various studies that consumers often struggle to discern the additional value presented by cues such as eco-labels, with such messages sometimes causing confusion or even having a detrimental effect on their decision-making [61]. Considering that not all the information provided on product labels is thoroughly read by consumers (as demonstrated by Pérez y Pérez et al. [62]), an excess of information can overwhelm consumers, leading to their inability to absorb it all [56]. Therefore, it becomes essential to minimize any potential misinterpretation of label claims to ensure that consumers fully grasp their meaning [63].

Enterprises should fully demonstrate cues that are easily overlooked by consumers and present critical cues in a clear way, making them unavoidable for consumers [64]. This usability extends to the visual elements presented to users, particularly high-quality images, which

should capture attention, be memorable, convey more than just textual information, evoke emotions and weave a narrative beyond the obvious [65,66].

Drugova et al. [67] provided important indications based on their findings, emphasizing that organic-labelled wheat products with additional claims were valued equally or less than the organic-only version. This suggests that multiple labels on organic products generally provide no additional consumer benefit and are likely to be ignored. These findings underscore the significance of employing a single, most salient cue that distinctly identifies the product.

Roca et al. [68], through an analysis of consumer representations and perceptions regarding environmental approaches, found that the implementation of new logos or information must meet the need for trust expressed by consumers, being in the form of a simple and synthetic global indicator. Therefore, investing in a recognizable cue, preferably graphic, because logos capture more visual attention than text eco-labels [69], is critical in improving consumer valuation of products.

According to Titova et al. [70], the colors of different products can serve as an indicator of quality to consumers, while Pelet et al. [41] stressed the importance of considering the design of wine labels. They revealed that relatively higher purchase intentions seem to be achieved with heraldic colors and low visual complexity, which lead to stronger effects on authenticity regarding pleasure.

In order to shape consumers' beliefs and confidence in purchasing wine online, similar to purchasing organic foods on the Internet, marketers can help consumers develop more positive perceptions of offered products by improving the accessibility of useful and objective information on nutritional content and the production process. Advertising messages could be more successful if they emphasized the promise of personal and social benefits [55]. Their conclusions may also be helpful for professionals in the wine sector, recommending the need to extend and intensify promotion as well as communication activities, highlighting quality and local origin.

Capitello et al. [71] studied the wine preferences of young, Italian consumers, noting that this segment finds the natural label as the most attractive, with more utility from the vineyard name than from any other brand name. They were further interested in back label information, especially concerning the wine production process.

Interestingly, as highlighted by Hu et al. [72], marketing managers responsible for mobile shopping environment design should include adjustments for consumers' specific preferences in different countries (e.g. enjoyable experiences in China vs. functional benefits in Italy), as some Western consumers "tend to base their purchase decision on utilitarian considerations".

The swift growth and integration of artificial intelligence (AI), machine learning and natural language processing applications pose a challenge for managers and policy makers, who must learn to effectively utilize these transformative technologies. A new phenomenon called the "word-of-machine" effect, described by Longoni and Cian [73], refers to the way trade-offs between utilitarian and hedonic attributes influence the acceptance or rejection of recommendations made by AI, introducing fresh avenues for research.

7. LIMITATIONS

The reported empirical results should be interpreted with consideration of several limitations. Firstly, it is important to note that the samples for the eye-tracking studies were drawn from a population consisting of students and university employees. Therefore, it may be worthwhile to replicate these findings on different populations in future research.

Another limitation pertains to the scope of the current study, examining three product types: red and white wine, and champagne. Given the evolving preferences of younger adults who are increasingly exploring alternative alcoholic beverages, it is advisable for consider a broader range of products in future investigation.

Additionally, it is essential to acknowledge the hypothetical nature of the choices made by the participants of this study. While efforts were made to minimize hypothetical bias through the use of a realistic webpage simulation and the selection of similar-priced products with hidden brand information, it should be highlighted that participants were not making real purchases. This aspect of the study may not fully capture the complexities of actual purchase decisions, particularly in light of the high cart abandonment rates in online shopping. The study also accounts for a potential pandemic-related influence on wine consumption, which may have been impacted by reduced social opportunities for drinking and growing income disparities among younger adults.

Furthermore, the conventional categorization of utilitarian and hedonic food products, which was more distinct in earlier literature as highlighted by Maehle et al. [50] and Wang [74], has become less clear-cut. These categories are now merging, as the hedonic and utilitarian characteristics of food products have become more intertwined and carry greater significance. Basic food products, once classified primarily as utilitarian, are now actively marketed for their hedonic qualities, including a

variety of flavors and frozen options, thereby enhancing the overall gastronomic experience.

8. CONCLUSION

In this study, the authors delved into the intricate realm of online wine shopping and the influential role of visual cues, both hedonic and utilitarian, in shaping consumer perceptions and behaviors. The findings shed light on the dynamic relationship between these cues and their impact on product perception, attitude and purchase intentions. Notably, the research allows to underscore the nuanced preferences of consumers, emphasizing the need for tailored strategies in the digital marketplace. Furthermore, the growing convergence is revealed of hedonic and utilitarian attributes in various food product categories, highlighting the importance of marketers adapting to these evolving trends. However, it is essential to acknowledge the study's limitations, including its sample demographics and the focus on specific wine types, calling for future research to expand its scope. Overall, this investigation contributes valuable insights for e-commerce businesses, suggesting that optimizing visual cues in online product presentations can be a potent tool for enhancing consumer engagement and influencing purchase decisions in the ever-evolving digital landscape. Ultimately, understanding the dynamic interplay between hedonic and utilitarian cues in consumer behavior remains a complex and evolving area of study, with ample room for exploration in future research.

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APPENDIX 1. ANCOVA RESULTS

ANCOVA - PA

Cases	Sum of squares	df	Mean square	F	p	η^2
Version	10.442	2	5.221	3.152	0.044	0.013
WWP	189.627	1	189.627	114.484	< .001	0.237
Residuals	599.604	362	1.656			

Descriptives - PA

Version	Mean	SD	N
Control	5.096	1.583	121
Glass	5.403	1.442	123
Grapes	5.411	1.393	122

Post-hoc comparisons - PA

		Mean difference	SE	t	Cohen's d	$p_{\text{-Tukey}}$
Control	Glass	-0.407	0.165	-2.463	-0.316	0.038
	Grapes	-0.273	0.165	-1.655	-0.212	0.224
Glass	Grapes	0.133	0.165	0.807	0.104	0.699

ANCOVA - PQ

Cases	Sum of squares	df	Mean square	F	p	η^2
Version	1.814	2	0.907	0.657	0.519	0.003
WWP	165.169	1	165.169	119.605	< .001	0.248
Residuals	499.905	362	1.381			

Descriptives - PQ

Version	Mean	SD	N
Control	5.085	1.287	121
Glass	5.122	1.369	123
Grapes	5.090	1.401	122

Post-hoc comparisons - PQ

		Mean difference	SE	t	Cohen's d	$p_{\text{-Tukey}}$
Control	Glass	-0.129	0.151	-0.857	-0.110	0.668
	Grapes	0.035	0.151	0.230	0.030	0.971
Glass	Grapes	0.164	0.151	1.087	0.139	0.523

ANCOVA - PT

Cases	Sum of squares	df	Mean square	F	p	η^2
Version	8.205	2	4.102	3.539	0.030	0.012
WWP	282.027	1	282.027	243.267	< .001	0.397
Residuals	419.678	362	1.159			

Descriptives - PT

Version	Mean	SD	N
Control	4.959	1.428	121
Glass	5.171	1.373	123
Grapes	5.311	1.370	122

Post-hoc comparisons - PT

		Mean difference	SE	t	Cohen's d	$p_{\text{-Tukey}}$
Control	Glass	-0.333	0.138	-2.412	-0.309	0.043
	Grapes	-0.301	0.138	-2.180	-0.280	0.076
Glass	Grapes	0.032	0.138	0.230	0.029	0.971

Post-hoc comparisons - WTT

		Mean difference	SE	t	Cohen's d	$p_{\text{-Tukey}}$
Control	Glass	-0.750	0.538	-1.394	-0.441	0.351
	Grapes	-1.150	0.538	-2.137	-0.676	0.091
Glass	Grapes	-0.400	0.538	-0.743	-0.235	0.739

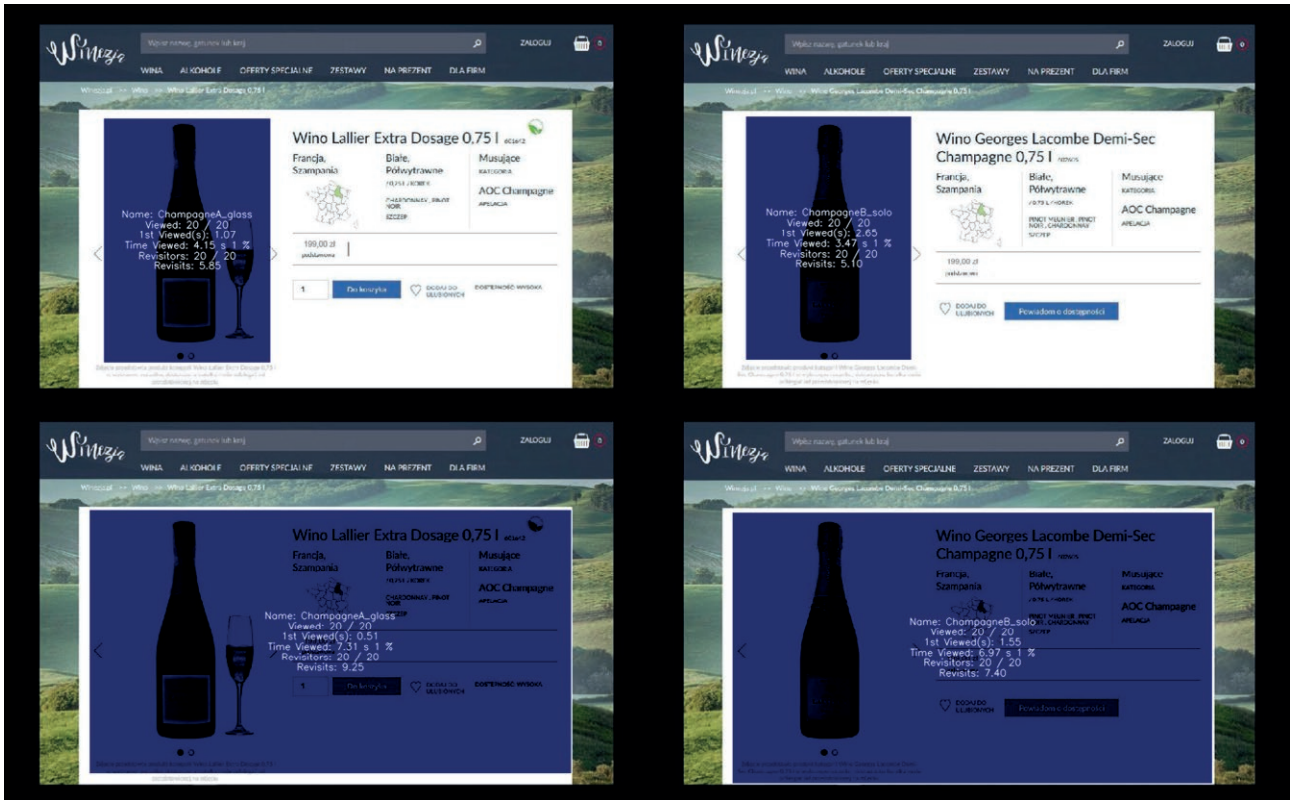
Post-hoc comparisons - UTB

		Mean difference	SE	t	Cohen's d	$p_{\text{-Tukey}}$
Control	Glass	-0.750	0.415	-1.806	-0.571	0.177
	Grapes	-1.100	0.415	-2.648	-0.837	0.028
Glass	Grapes	-0.350	0.415	-0.843	-0.266	0.678

Post-hoc comparisons - WTB

		Mean difference	SE	t	Cohen's d	$p_{\text{-Tukey}}$
Control	Glass	-0.550	0.429	-1.283	-0.406	0.410
	Grapes	-1.500	0.429	-3.500	-1.107	0.003
Glass	Grapes	-0.950	0.429	-2.217	-0.701	0.077

APPENDIX 2. AREA OF INTERESTS RESULTS



AOI Study 2B (variant 1)

AOI Study 2B (variant 2)