

SUSTAINABLE WINE INDUSTRY: CONSUMER BEHAVIOUR ANALYSIS

Dejan Tešić¹; Nenad Marković²

Abstract

In accordance with the increase in consumer awareness of the negative consequences of pollution of the natural environment, many industries are adjusting their activities, striving for the placement of products and services that are environmentally acceptable and based on the postulates of sustainability. In order to reach consumers more easily, manufacturers in various industries are adapting elements of their brands to make them green as much as possible. The so-called „green wave” affects changes in the behaviour of producers in all sectors of the economy, including wine producers. Wine consumers around the world have different attitudes regarding green marketing activities. The aim of this paper is to gain insight into the attitudes and intentions of wine consumers in relation to the eco-friendly activities of wine producers in Bosnia and Herzegovina.

Key Words: *wine, consumers, behaviour, sustainability.*

JEL classification: *M31, Q56.*

Introduction

In the world, there is a tendency that an increasing number of consumers want the companies from which they buy products and services to behave in accordance with the requirements of environmental protection (Rathee & Milfeld, 2024). In the last few years, the topic of sustainability has occupied all sectors of the economy, putting the challenges of environmental protection and the achievement of certain social goals in front of many small

¹ Dejan Tešić, PhD, assistant professor, University of East Sarajevo, Faculty of Economics Brčko, Studentska 11, Brčko district of Bosnia and Herzegovina, 0038765948683, dejan.tesic.efb@gmail.com

² Nenad Marković, PhD, assistant professor, University of East Sarajevo, Faculty of Medicine Foča, Studentska 5, Republic of Srpska, Bosnia and Herzegovina, 0038765572480, qaofficeuis@gmail.com

and medium-sized companies operating within the agribusiness industry (Alfiero et al., 2024). According to Guthey and Whiteman (2009), the main threats faced by actors operating in the wine industry are the rise in the price of energy, the shortage of drinking water, concerns about inadequate disposal of chemical waste, as well as constant concerns about climate change. In an effort to respond to the aforementioned challenges as adequately as possible, stakeholders put pressure on the adoption of sustainable practices, which aim at more rational use of natural resources, reduction of environmental pollution, and, consequently, constant investment in product innovation (Carrillo-Hermosilla et al., 2010). Generally speaking, wine consumers are becoming more and more aware of the problem of environmental pollution, and, accordingly, have increasing demands in relation to wine producers, who, in this context, strive to implement the principles of sustainability as a basis for their differentiation strategy, thus creating an environment in which their consumers will develop stronger emotional ties with sustainable brands (Dias et al., 2023).

Considering the introductory notes on the tendency of consumer behaviour in the world, the goal of this paper is to sharpen the insight into the behaviour of wine consumers and their attitudes regarding the issue of sustainability in Bosnia and Herzegovina. This paper consists of an introduction, a literature review, a section describing the research methodology, results, discussion and conclusion.

Literature review

Sgroi et al. (2023) investigate consumer behaviour and their willingness to buy wine that is produced in accordance with environmental protection standards. Heyns et al. (2014) put the focus of their research on the degree of acceptance of „green“ wine in South Africa. In their research, Ogbeide et al. (2015) seek to answer the question of whether consumers are willing to pay a higher price for organic wine. In accordance with the growing interest of consumers in the topic of sustainable development, Bonn et al. (2016) deal with an attempt to answer the question of whether the practices of organic wine producers influence the behaviour of customers and their purchase intentions. Barber (2010) conducts research with the aim of finding out who are the consumers who are ready to pay more for wine that is in eco-friendly packaging, and to, accordingly, develop a proposal for adequate marketing strategies. Sogari et al. (2015) conduct an exploratory study with the aim of understanding how beliefs about the environment and beliefs about sustainable labelling affect consumer

attitudes about sustainable wine. In order to, on the one hand, learn about consumers' perceptions of sustainable wine, and, on the other hand, determine the clusters to which consumers belong according to the influence of factors such as beliefs about environmental protection, beliefs about sustainable wine certification and attitudes in relation to sustainable-labelled wine on willingness to pay for wine, Sogari et al. (2016) conduct research among Italian wine consumers. Barber et al. (2009) examine the level of consumer knowledge about the importance of environmental protection, and the impact of that knowledge on the willingness to buy wine. Barber et al. (2010) explore the topic of the connection between sustainability and marketing in the field of wine tourism, with an effort to highlight the importance of promoting tourist destinations. Lerro et al. (2021) investigate the influence of moderating variables on consumer preferences when purchasing sustainable wine.

According to the available information, it can be seen that in Bosnia and Herzegovina there is a lack of research on the subject of sustainability in relation to the wine industry and the wine market. Vukojević et al. (2022) investigate the potential of wine tourism in the Republic of Srpska, which they identify as a growing wine region in Bosnia and Herzegovina. According to the review of the literature mentioned above, it can be concluded that it is necessary to carry out more research in Bosnia and Herzegovina within the given research subject. Based on the literature review, the following hypotheses were proposed:

1. H1: General attitudes of consumers on the issue of sustainability has influence on consumers' view on sustainability matter in relation to wine.
2. H2: Consumers' view on sustainability matter in relation to wine has influence on purchase and post-purchase consumer behaviour related to sustainable wine.

Methodology

For the purposes of research, a questionnaire was created, which consisted of 19 questions. The survey was conducted in one winery in the Brčko District of Bosnia and Herzegovina, and a systematic sampling method was used, so that in the period from January 3, 2024, until January 28, 2024 every tenth visitor to the winery, who agreed to participate in the research, was questioned. Based on the sample, a total of 92 respondents were surveyed. The first set of four questions related to the demographic data of the respondents, followed by five questions related to factors that are

decisive for the purchase of wine, importance that wine is produced in accordance with the requirements of environmental protection (five point Likert scale), and preference for wine packaging material. The remaining 12 questions were in the form of statements that were arranged in three constructs (five-point Likert scale). Statements (items) by constructs were created based on a review of the relevant literature: construct „General attitudes of consumers on the issue of sustainability” (Barber (2010), Sogari et al. (2016), Barber (2009), Sogari et al. (2015)) construct „Consumers’ view on sustainability matter in relation to wine” (Ogbeide et al. (2015), Bonn et al. (2016), Sogari et al. (2016)) and construct „Purchase and post-purchase consumer behaviour related to sustainable wine” (Sogari et al. (2016), Barber (2009), Sogari et al. (2015)). When talking about the statements on a Likert scale from one to five, one represents the lowest and five the highest degree of agreement with the statement. The data were processed with the help of the IBM SPSS 26 software package.

Results

Table 1 provides an overview of the demographic data on the respondents.

Table 1: *Demographic data on respondents*

| Variable | | Frequency | Percentage |
|----------------|---------------|-----------|--------------|
| Gender | Male | 56 | 60.9 |
| | Female | 36 | 39.1 |
| | Total | 92 | 100.0 |
| Generation | „Baby Boomer” | 12 | 13.0 |
| | Generation X | 30 | 32.6 |
| | Generation Y | 35 | 38.0 |
| | Generation Z | 15 | 16.3 |
| | Total | 92 | 100.0 |
| Education | High School | 12 | 13.0 |
| | Bachelor | 68 | 73.9 |
| | Master | 4 | 4.3 |
| | PhD | 8 | 8.7 |
| | Total | 92 | 100.0 |
| Monthly income | Above average | 68 | 73.9 |
| | Average | 12 | 13.0 |
| | Below average | 12 | 13.0 |
| | Total | 92 | 100.0 |

Source: *Authors' calculation*

When we look at the factors that are decisive for the purchase of wine by respondents, it can be stated that in the total number of responses, the factor „brand“ appears 52 times (19.4%), the factor „packaging“ 24 times (9.0%), the factor price 40 times (14.9%), „geographic origin“ factor 28 times (10.4%), „sustainability label“ factor 12 times (4.5%), „previous experience“ factor 36 times (13.4%), the factor „recognition and awards 8 times (3.0%), while some other factor besides the previously listed appears 4 times (1.5%). To the question „To what extent is it important to you that wine is produced in accordance with the requirements of environmental protection?“, on the basis of data processing, the result was a mean of 3.87, with a standard deviation of 1.16. Observing the respondents' preference for wine packaging material, it can be said that 88 respondents (95.7%) prefer glass, 4 respondents (4.3%) prefer plastic, while not a single respondent prefers „Tetra-pak“ or any other material.

As part of the questions related to the statements where the respondents express their degree of agreement with them, an analysis of internal consistency (reliability), was performed (Table 2). As according to Nunnally (1978) the minimum acceptable value of Cronbach's alpha is 0.70, we can conclude that satisfactory internal consistency was achieved for all three constructs.

Table 2: *Reliability statistics*

| Construct | Cronbach's alpha |
|--|------------------|
| General attitudes of consumers on the issue of sustainability. | 0.72 |
| Consumers' view on sustainability matter in relation to wine. | 0.93 |
| Purchase and post-purchase consumer behaviour related to sustainable wine. | 0.73 |

Source: *Authors' calculation*

Table 3 provides an overview of the values of means and standard deviations of the degree of agreement with 12 statements about sustainability and consumer intentions.

Table 3: *Statements regarding sustainability attitudes and consumer intentions*

| Statements | M | SD |
|--|------|------|
| General attitudes of consumers on the issue of sustainability | | |
| I am concerned about environmental pollution. | 4.09 | 1.02 |
| I believe that the environment should be preserved for the sake of future generations. | 4.65 | 0.92 |

| | | |
|---|------|------|
| When buying products, I pay attention to whether they are manufactured in accordance with environmental protection standards. | 3.00 | 1.29 |
| I buy products whose packaging is suitable for recycling. | 3.13 | 1.12 |
| I dispose of waste suitable for recycling in an adequate manner. | 2.57 | 1.39 |
| Consumers' view on sustainability matter in relation to wine | | |
| When buying wine, I pay attention to whether it was produced in accordance with environmental protection standards. | 2.61 | 1.21 |
| When buying wine, I pay attention to the fact that it is packed in packaging that is as suitable as possible for recycling. | 2.78 | 1.18 |
| When buying wine, I pay attention to the fact that the label on the packaging is as suitable as possible for recycling. | 2.17 | 1.35 |
| Purchase and post-purchase consumer behaviour related to sustainable wine | | |
| I would buy wine that was produced in accordance with environmental protection standards. | 4.04 | 0.96 |
| I am willing to pay more for wine that is produced in accordance with environmental protection standards. | 3.48 | 0.98 |
| I would recommend to others to buy wine that is produced in accordance with environmental protection standards. | 3.52 | 0.88 |
| I would prefer to buy wine that is produced in accordance with environmental protection standards, compared to a higher quality wine that is not. | 3.17 | 1.25 |

Source: *Authors' calculation*

Regarding the hypothesis, the results are as follows. Linear regression analysis was used to test the first hypothesis related to the influence of general attitudes of consumers on the issue of sustainability on consumers' view on sustainability matter in relation to wine. Before the analysis itself, the assumptions for the application of linear regression were checked. Analysis of scatterplot confirmed the assumption of linearity and homoscedasticity, and based on residuals statistics, the absence of extreme outliers was confirmed. Independence of observations is confirmed with the Durbin-Watson statistic, which is 2.43 and is between the values 1.50 and 2.50, which are considered desirable values when checking this assumption. Results show that there is a significant regression ($F(1, 90) = 101.17, p = 0.000$). The R^2 value is 0.53, which means that 53% of the variation in consumers' view on sustainability matter in relation to wine is explained by general attitudes of consumers on the issue of sustainability. According to Cohen (1988), this coefficient of determination value represents a large effect size. Linear regression

function is $y = -1.196 + 1.066*x$. According to the results, the first hypothesis is accepted.

For the purposes of checking the second hypothesis about the influence of consumers' view on sustainability matter in relation to wine on purchase and post-purchase consumer behaviour related to sustainable wine, linear regression analysis was also used. By applying the same methodology, assumptions about linearity and homoscedasticity were confirmed, as well as independence of observations (Durbin-Watson statistics value is 1.88). The value of coefficient of determination is 0.16 which means that 16% of the variation of purchase and post-purchase consumer behaviour related to sustainable wine is explained by consumers' view on sustainability matter in relation to wine. This R^2 value represents a medium effect size according to Cohen (1988). Linear regression function is $y = 2.897 + 0.261*x$. According to the results, the second hypothesis is also accepted.

Discussion

The most important factors when deciding to buy wine for consumers are brand and price, and when we look at the sustainability factor, which is the subject of this paper's analysis, we can conclude that it does not occupy such a significant percentage as deciding factor for buying wine. These results are compatible with the research of Heyns et al. (2014) and Sgroi et al. (2023) where brand and price represent the two main triggers of wine purchase. In contrast, in the research of Sogari et al. (2016) it is stated that the most significant triggers for wine purchases are sensory characteristics and previous experience, with price and brand coming after. In relation to packaging, it can be seen that consumers overwhelmingly prefer glass, and such conclusions can also be viewed through the prism of insufficient consumer knowledge about the impact of the production of the mentioned materials on environmental pollution, because consumers are probably not familiar with, for example, the advantages of plastic compared to glass (Accorsi et al., 2015). Observing from another angle, Barber (2010) states that it is dangerous to build the image of a sustainable product based only on packaging such as „Tetra-pak“. If they are aware that the manufacturer uses production methods that do not support sustainability, consumers will ignore packaging that is eco-friendly, and „punish“ the manufacturer.

As we can see from the research results, both hypotheses are accepted. The hypotheses follow the logic that if an individual is aware of the issue of sustainability, this awareness will be reflected in the evaluation of the product, which is, in this particular case, the wine. Such an evaluation of the product will determine the behaviour during the purchase of the product, as well as the post-purchase behaviour of the consumer. Based on the research in this paper, we can conclude that general attitudes of consumers on the issue of sustainability affects consumers' view on sustainability matter in relation to wine, and that consumers' view on sustainability matter in relation to wine affects purchase and post-purchase consumer behaviour related to sustainable wine. These conclusions are in correspondence with the conclusions of Barber et al. (2009), Barber et al. (2010), Sogari et al. (2015), and Ogbeide et al. (2015). In each of the aforementioned studies, the impact of awareness on the issue of sustainability on the part of consumers, with the anticipation of sustainable wine and certain behaviour of sustainable wine consumers (who most often express a willingness to pay more for sustainable wine) has been confirmed. Conditionally speaking, it can also be concluded that the conclusions of this research agree with the conclusions of the research by Bonn et al. (2016) which, in addition to the influence of consumer environmental awareness, also analyses the influence of trust in wine producers on consumers buying intentions.

Conclusion

Sustainability is a topic that permeates all sectors of the economy, including the wine industry. Numerous studies in the world lead to the conclusion that sustainability is a topic that wine consumers attach increasing importance, thus, accordingly, wine producers also have the task of adapting their activities to the new green agenda. For this reason, the contribution of this paper is to verify the same hypothesis on the market of Bosnia and Herzegovina, where it was concluded that consumers, as well as consumers in other parts of the world, have a developed awareness of sustainability and that this awareness affects their intentions regarding the purchase of wine but also with their post-purchase behaviour.

Another contribution of this paper can be represented by managerial implications. The results of this research can encourage managers to introduce practices of sustainable production and sustainable marketing of wine because consumers in Bosnia and Herzegovina are becoming more

and more aware of sustainability. Managers should strive to target environmentally conscious consumers, and to build an image with adequate marketing activities that will send a clear message to the market that they manage socially responsible companies. The limitations of this research are related to the size of the sample and the fact that the research was conducted in one facility, which is also the only winery in the Brčko District. For future research, a recommendation can be made to expand the sample, with the possibility of creating a sample in more countries from the surrounding area. Moreover, the research can be expanded with the analysis of the influence of demographic characteristics of consumers on intentions regarding the purchase of sustainable wine. Another proposal for future research would be to investigate the financial benefits of wine producers who introduce the practice of wine production and marketing in accordance with sustainability standards.

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