Consumer preferences for craft beer: The interplay of localness and advertising language

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Consumer preferences for craft beer: The interplay of localness and advertising language*

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Abstract

This study explores the influence of the language of the label, origin of production, and origin of brewing ingredients on Croatian consumers' preferences and willingness to pay for organic craft beer. Employing an online survey and a choice experiment among 223 Croatian alcohol consumers, we find that while there's a willingness to pay a premium for locally brewed beer with local ingredients, the use of English on labels negatively impacts consumers' willingness to pay. This suggests a preference for local narrative over foreign language labels, indicating that craft beer producers in tourist destinations like Croatia should prioritize local storytelling in their marketing strategies to better connect with domestic consumers.

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1 Introduction

In recent decades, the global beverage industry has undergone a profound transformation driven by the emergence of the craft movement, which has been particularly active for the beer industry (Garavaglia and Swinnen 2017). This paradigm shift has led to a move away from conventional brewing practises. Craft breweries around the world are often characterised by small, independent operations that emphasise quality and innovation with artisanal methods, special ingredients and individual production processes, coupled with significant growth in craft beer consumption (Jaeger et al. 2020)

The craft revolution has not bypassed Croatia, where the craft beer movement began in 2013 with the opening of the first craft brewery. Since then, the popularity of craft beer in Croatia has increased significantly, which has led to a nationwide expansion of craft breweries (Mastanjević et al. 2019). Consumer demand for craft beer largely depends on consumer expectations and perceptions, since often the quality of the product cannot be tested at the time of purchase (Berning et al. 2017). These expectations are often based on the packaging and labelling of the product.

The appeal of craft beer is closely linked to the narratives it conveys (Mastanjević et al. 2019). Craft breweries thus become storytellers, telling stories about provenance, innovative brewing techniques and carefully selected ingredients and sharing this information via beer labelling. This approach creates a connection between the consumer and the beverage and helps to position the product in the market. This narrative and connection may be disrupted by the acquisition of craft beer brands by larger companies, leading to a notable downturn in market demand and social sentiment (Guler et al. 2024).

Operating in a prominent tourist destination such as Croatia brings an additional layer of complexity to the craft beer sector. Craft brewers, aware of the international audience, often use English labelling for their products as a strategic positioning tactic. However, this strategic decision can inadvertently create tension with the preferences of domestic consumers who value not only the quality but also localized narrative of the brewery. Therefore, although

a product label can be an important marketing tool, it can also be confusing or misleading (Tootelian and Ross 2000). The use of English labels on local products can thus potentially disrupt the connection with local consumers, for whom the local story embedded in craft beer is an important factor in their consumption decisions (Gerritsen et al. 2010).

The growing development of the craft beer movement prompts a critical examination of consumer preferences and willingness to pay for the unique characteristics of a craft beer. The aim of our study is therefore to investigate the influence of labelling language, origin of production and origin of brewing ingredients on local consumers' preferences and willingness to pay for organic craft beer in Croatia. Given the tourism context in Croatia, a particular focus is placed on investigating the interplay between the strategic use of the English language on labels as a marketing tactic and the preferences of local consumers, for whom the inherent local narrative is an important determinant of their consumption choices.

Previous studies have examined WTP for organic (Waldrop and McCluskey 2019; Poelmans and Rousseau 2017) or local craft beer (Hart 2018; Carbone and Quici 2020), locally sourced craft beer (Ha et al. 2017) and sustainable beer (Staples et al. 2020; Carley and Yahng 2018). To our knowledge, however, there are no studies that investigate the influence of the language on the beer label in combination with the local origin and local ingredients on consumers' willingness to pay for craft beer.

Our paper proceeds as follows. Next section presents an overview of the methods we employed to collect our data for the empirical analysis and discusses our experimental design in detail. We present our results in Section 3 and conclude in the last section.

2 Materials and Methods

A stated preference choice experiment was conducted among Croatian beer consumers. Inclusion criteria required participants to have consumed beer at least once within the past six months. A quota sampling method was employed, resulting in a total sample size of 200 participants. Specifically, 100 participants were selected from the Istria region, home to the local

brewery under investigation, while another 100 participants were recruited from Zagreb and its surrounding areas, representing the largest consumer market in Croatia. Moreover, the selected local beer is exclusively sold in these two markets. Data were collected in November 2022.

2.1 Survey Design

The survey comprised several sections. To ensure a uniform understanding of craft beer among participants, a simple definition was provided after the question "Have you heard of the term craft beer?" The definition stated: "Craft beer is beer produced in a local craft brewery, independent of major producers. It is produced in smaller quantities using high-quality ingredients. Often, it has a specific, unique taste." A Discrete Choice Experiment followed, described momentarily. Additionally, participants' attitudes towards the quality of industrial and craft beer were assessed as well as the sociodemographic characteristics of the participants including a set of questions regarding participants' knowledge and behavior in purchasing and consuming craft beer.

2.1.1 Choice Experiment Design

Participants were asked to envision a scenario where they visit a familiar cafe or restaurant and wish to order a beer. They were presented with 30 choice situations, each offering two alternatives and a third option of not choosing any of the product alternatives. Each alternative varied across three attributes: language (local dialect or English), label (organic, local beer, or local ingredients), and price (three level, 27 Kn, 30 Kn, 33 Kn; 10 Kn = €1.33 at the time of the study).

The attributes and levels were decided after consultations with a local brewery, which has been operating since 2017 as the first *organic* craft brewery in Croatia. One of the brewery's unique marketing strategies involves using the local dialect in communication, reflecting its positioning in the market. Given its location in Istria, a region highly developed in tourism, the company also considered using the English language in labeling and communicating with

Figure 1: Example of a choice task

their potential international customers. Moreover, the brewery utilizes barley from its own cultivation, raising questions about the potential use of locally sourced ingredients in further positioning the brewery. The price levels corresponded to actual market potential of the company's offerings (Staples et al. 2020).

The beer labels used in the choice experiment were designed by designers collaborating with the local craft brewery, with the existing market label serving as the basis.See Figure 1 for an example of a choice task.

In order to allocate the attributes and attribute levels in a set of choice tasks, we used a sequential Bayesian approach (Ferrini and Scarpa 2007; Sandor and Wedel 2001; Scarpa et al. 2007). This means that information regarding consumer preferences for the selected attributes has been implemented for the generation of the experimental design. In order to do this, we have conducted a pilot survey on 237 consumers, where a choice set following a D-efficient design with priors equal to zero has been implemented. The design consisted of a set of thirty choice tasks which were divided into three blocks of ten choice tasks each. This means that each respondent had to face ten choice tasks involving two organic craft beer alternatives and an opt-out alternative (buy neither). In this pilot phase, priors equal to zero have been utilized since very little information exists about Croatian consumer preferences for craft beer and for the attributes of interest (Bliemer and Collins 2016). Then, data from the pilot have been used to estimate a Multinomial Logit Model (MNL) whose coefficient

estimates have been implemented as Bayesian priors to generate an efficient design, following the D-error minimization criteria. (Bliemer and Rose 2010) demonstrated that designs built on multinomial logit probabilities adequately perform for Random Parameter Logit models, as well, despite the difference in the asymptotic variance-covariance estimator. The choice of implementing a Bayesian efficient design is motivated by the fact that Bayesian efficient designs are generally suggested when the survey design does not imply a large number of respondents, like ours (Scarpa and Rose 2008). Moreover, as an attempt to collect a more extensive set of information, in the final Bayesian design, we did not divide the design into blocks. Accordingly, from each respondent information on thirty choice tasks has been gathered. We opted for an unblocked design, anticipating a limited response rate from beer consumers. This approach allowed us to pose more choice tasks to each respondent, enhancing the statistical power of our study.[1] The software package Ngene was implemented (Metrics 2014), which is a standard in this field.

2.2 Econometric analysis

In the next section we describe our econometric methods for analysing the choice data we collected from our survey on craft beer choice.

2.2.1 Choice Experiment Analysis

The origin of DCEs lies in Lancaster's theory of value of product attributes (Lancaster 1966) and McFadden's random utility theory (McFadden 1974). Discrete choice models (DCMs) are the workhorse for analyzing data from DCEs by which we assume that individuals choose the product alternative that yields the highest utility. More specifically, the utility U of an individual i of choosing alternative j in the t^{th} choice situation is $U_{ijt} = V_{ijt}t(X_{ijt}, \beta') + \varepsilon_{ijt}$. The first component, $V_{ijt}(X_{ijt}, \beta')$, is the deterministic part that is assumed to be a

1. Louviere (2004, pp. 18) notes that "...it is widely believed that 'modeling' individuals requires 'smallish designs,' but in contrast to the equivalent of widely held 'academic urban myths' in marketing and transport research, there is considerable evidence that humans will 'do' dozens (even hundreds) of T's" (where T stands for choice tasks). Hensher et al. (2001) also tested different numbers of choice sets (4, 8, 16, 24 and 32) and found that statistical gains are quite marginal.

function of a vector β of parameters characterizing choices and of a vector X of alternative j and of and individual i. The second component ε_{ijt} is a random component, which captures observable individual and alternative-specific factors that influence utility (Luce 1977).

We use a Mixed Logit Model with Error Component (MXL-EC) to address some limitations of standard discrete choice models, such as homogeneity in preferences and the assumption of independence of irrelevant alternatives (IIA) (Train 2009). The MXL-EC model relaxes the IIA assumption and accounts for heterogeneous preferences by allowing the vector of parameters β to vary among individuals with values that depend on an underlying distribution capturing individuals' random tastes. In addition, the MXL-EC model allows to account for the correlation among the purchase alternatives utilities which vary for each choice task, contrary to the opt-out alternative that remains constant along the choice set (Scarpa et al. 2005). We also assume that correlation across utilities for the different parameters exists, since some of the selected attributes might be inter-dependent. Following (Lancaster 1966) theory, individual utility in choosing a good can be segregated in to the partial utilities given by the attributes of the good in question. As such, in our study, the utility function of consumer i in choosing the organic craft beer alternative j in the t^{th} choice task can be specified as follows:

$$U_{ijt} = NoBuy + \beta_1 Price_{ijt} + \beta_{2i} English_{ijt} + \beta_{3i} LocallyBrewed_{ijt} t + \\ + \beta_{4i} LocalIngredients_{ijt} + 1_j(\eta_{ijt}) + \varepsilon_{ijt} \tag{1}$$

where *NoBuy* is the alternative specific constant representing the opt-out choice alternative; *Price* is a continuous variable represented by the three retail price levels for one can of organic craft beer; *English* is a dummy variables which takes a value of 1 in case the information about the products are reported in the English language and 0 if they are reported in Croatian; *LocallyBrewed* and *LocalIngredients* are dummy variables defining information about production origin, which respectively take value of 1 if the organic craft beer has been brewed locally or made with local ingredients, 0 otherwise; $1j(.)$ is an indicator function that

takes value of 1 for the designed craft beer alternatives, 0 otherwise, while η_{ijt} is the error component distributed normally with zero mean, which inflates the variance of utility for the options different from the no-buy alternative; ε_{ijt} is an unobserved error term that is extreme value type-I (Gumbel) distributed, i.i.d. over alternatives, and independent of the β' coefficients. All the non-price attribute coefficients are specified as random parameters assuming a normal distribution, while the price attribute and the no-buy alternative are assumed to be fixed parameters. Moreover, full correlation across the random coefficients is assumed (Mariel and Artabe 2020). The specification of the price coefficient as a fixed parameter allows for convenience in the calculation of WTP values, while the no-buy alternative constant is generally treated as fixed parameter for modelling purposes. Given the non-closed form of the density function of the random coefficients, estimates are obtained by maximizing a simulated log-likelihood function, evaluated at 1000 Halton draws (Train 2009). Estimates from equation 1 can be used to derive Marginal willingness-to-pay (mWTP) values for product attributes. Specifically, mWTP for the product characteristics can be calculated as the negative ratio of the non-price attribute coefficients, divided by the derivative of the utility function with respect to the variable '*Price*'. For example, $\beta_{2i}/\ \beta_1$ is the mWTP for a can of organic craft beer with information reported in English compared with an otherwise equivalent can of organic craft beer with information shown in Croatian.

2.3 Effect of socio-demogrpahic and attitudinal variables

To further explore how mWTP for the selected attributes varies depending on individual characteristics, we can use estimates from the MXL-EC model to derive individual-specific estimates. These estimates are generated by utilizing the estimated parameters as a prior and incorporating each person's actual choices to form an individual-specific posterior estimate (Train 2009). From these estimates, individual-specific mWTPs can than be calculated, by deviding each individual preference parameter with the negative value of the price coefficient. These individual conditional on choice mWTPs can then be used as dependent variables in a Seemingly Unrelated Regression Equations (SURE) model (Zellner 1963). We use a

SURE model instead of separate Ordinary Least Squares (OLS) estimators since the system regression estimator jointly estimates multiple models, enabling the simultaneous testing of hypotheses concerning parameters across these models. Accordingly, we estimate the following system of regressions:

$$\text{mWTP}_{English,i} = \alpha_0 + \sum_{\kappa=1}^{K} \alpha_\kappa s_{\kappa i} + \epsilon_{1i} \quad (2)$$

$$\text{mWTP}_{LocallyBrewed,i} = \zeta_0 + \sum_{\kappa=1}^{K} \zeta_\kappa s_{\kappa i} + \epsilon_{2i} \quad (3)$$

$$\text{mWTP}_{LocalIngredients,i} = \lambda_0 + \sum_{\kappa=1}^{K} \lambda_\kappa s_{\kappa i} + \epsilon_{3i} \quad (4)$$

where $\text{mWTP}_{English,i}$, $\text{mWTP}_{LocallyBrewed,i}$ and $\text{mWTP}_{LocalIngredients,i}$ are the individual specific mWTPs for the *English*, *LocallyBrewed*, *LocalIngredients* attributes respectively; α_0, ζ_0, and λ_0 are the intercepts of the respective model equations; $s_{\kappa i}$ corresponds to the κ_{th} explanatory variable ($\kappa = 1$ to K); α_κ, ζ_κ, λ_κ represent for each equation the increment in the respective attribute mWTP, associated with a unitary variation of $s_{\kappa i}$; ϵ_{1i}, ϵ_{2i}, ϵ_{3i} are the error terms which are assumed to be homoskedastic, have zero mean, are independent across individuals, and correlated across the equations.

3 Results

3.1 Preference and mWTP for Craft Beer Attributes

In Table 2 estimates from the MXL-EC model are reported. We observe that standard deviation parameters of the 'English language' and 'Local ingredients' attributes, as well as of the error component are statistically significant at conventional significance level. This suggests consumer preferences for the beer products are heterogeneous. Hence, consistent with previous studies (Atallah et al. 2021), heterogeneity in consumer preferences is an issue

that needs to be addressed when assessing consumer craft beer choices. When looking at the mean estimates, we observe that the constant, i.e. No-buy, and the price coefficients are negative and statistically significant. This indicates that the utility consumers gain from not selecting any of the suggested alternative products is lower than the utility they derive from purchasing one of them. Similarly, increasing increments of the price variable decrease the associated utility in choosing to buy the organic craft beer. We also observe a dis-preference for the English language, given the negative sign and statistical significance of the 'English' mean coefficient. Hence, consumer utility decreases when information about the products are reported in English instead of in Croatian language. On the other hand, mean coefficients of the 'Locally Brewed' and 'Local Ingredients' attributes are positive and statistically significant, suggesting that individuals tend to prefer the organic craft beer when it is also locally brewed or produced with local ingredients.

In order to define the economic value of consumer preferences for the organic craft beer and the characteristics of interest, we use the estimates of the MXL-EC model to derive Willingness To Pay (WTP) estimates. These are reported in Table 3. First, we observe that based on a Wald test, the null hypothesis of the mean WTP values being equal to 0 can be rejected at conventional significance levels for all the variables under investigation. Consumers are willing to pay, on average, 31.66 Kn for the basic organic craft beer (since the WTP for the No-buy option is -31.66). However, the WTP for the product decreases about 2.70 Kn when the label information are presented in English. On the other hand, we observe a price premium for the attributes relative to the locality of production. The highest price premium is for the 'Local ingredients' attribute (2.67 Kn), followed by the 'Locally Brewed" claim (1.01 Kn).

3.2 Effect of socio-demographic and attitudinal variables on mWTP structure for craft beer attributes

As mentioned before, estimates from the MXL-EC model suggest that individual preferences are heterogeneous. Hence, the marginal WTP (mWTP) for the selected attributes may shift depending on individual characteristics, such as socio-demographic and attitudinal variables. Accordingly, conditional individual-specific mWTP derived from the MXL-EC are used to estimate a SURE model. In this way, we are able to determine whether and how, marginal WTPs for the 'English Language', 'Locally Brewed' and 'Local Ingredients' attributes vary with demographic and attitudinal information. Results from the SURE model are reported in Table 4. The first column of Table 4 shows that none of the selected explanatory variables significantly affects mWTP structure for the English attribute at the 5% level. On the other hand, columns (2) and (3) show that some explanatory factors significantly impact mWTP for locally brewed craft beer and for the use of local ingredients. More specifically, preferring imported beer over Croatian beer significantly decreases mWTP values for both local origin attributes. In addition, people preferring a beer without eco-label (rather than with eco-label), have a higher mWTP for all three attributes. This might suggest that individuals who do not put a lot of weight on eco-labels might give more importance to product attributes related to the origin, such as origin of ingredients and brewing location, and to the use of English language.

4 Conclusions

Transformation within the global beverage industry, partially driven by the craft movement, highlights a significant paradigm shift from traditional brewing to artisanal methods that emphasize quality and innovation. This shift, particularly noted in the beer industry, has garnered substantial growth in craft beer consumption. The case of Croatia, where the craft beer movement started in 2013, underscores the role of consumer perceptions and expectations in shaping demand, especially when product quality cannot be directly assessed at

the point of purchase. The narrative and connection that craft breweries establish through storytelling, innovative brewing techniques, and distinct labeling play a crucial role in market positioning. However, this connection can be disrupted when craft beer brands are acquired by larger companies, illustrating the delicate balance between growth and maintaining the artisanal essence that appeals to consumers (Gerritsen et al. 2010).

This study explores consumer preferences in the craft beer market in Croatia, a notable tourist destination, and more specifically the impact of labeling language, production origin, and the source of brewing ingredients on local consumers' preferences and willingness to pay for organic craft beer.

Consistent with the existing literature (Atallah et al. 2021), results from this study show that consumers tend to pay a WTP premium for craft beer when it is locally brewed or produced with local ingredients. However, when it comes to consumer preference structure for English language usage on labels, a negative mWTP value for this attribute is observed. Consequently, the conclusions drawn from this study dissuade producers from adopting English labeling as a marketing strategy for their products.

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Table 1: Descriptive statistics

	Summary
N	223
Age	43.36 (12.40)
Place of residence	
Rural area	41 (18.5%)
Urban area	181 (81.5%)
How often do you drink craft beer?	
Often or always	33 (14.8%)
Periodically	87 (39.0%)
Rarely	81 (36.3%)
Never	22 (9.9%)
Gender	
Female	84 (37.7%)
Male	139 (62.3%)
Education level	
Finished high school	110 (49.3%)
Completed undergraduate studies	39 (17.5%)
Completed graduate/postgraduate studies	74 (33.2%)
Household's income level	
Lower/Middle income	148 (77.1%)
Higher/High income	44 (22.9%)
Importance of: Desire to taste/drink something local	
Completely irrelevant	20 (10.5%)
Unimportant	10 (5.3%)
Neither important, nor unimportant	56 (29.5%)
Important	60 (31.6%)
Very important	44 (23.2%)
Compared to industrial beers, craft beers are, in your opinion:	
Better quality	124 (56.1%)
Equally high quality	83 (37.6%)
Inferior quality	14 (6.3%)
I prefer ...	
Croatian beer	103 (46.2%)
Indifferent between Croatian/Imported or prefer Imported	120 (53.8%)
I prefer ...	
Ecological production	41 (18.5%)
Indifferent or without eco-label	168 (81.5%)
Importance of: Because that's how I help the local economy	
Completely irrelevant	35 (18.5%)
Unimportant	25 (13.2%)
Neither important nor unimportant	65 (34.4%)
Important	49 (25.9%)
Very important	15 (7.9%)
I prefer ...	
Local origin	76 (34.1%)
Indifferent	133 (59.6%)
No mark of local origin	14 (6.3%)

Table 2: Estimates from Mixed Logit Model with Error Component

	(1) Coefficients	
Variable	Mean	S.E.
Price	-0.312 ***	(0.035)
English	-0.843 ***	(0.182)
Locally Brewed	0.351 ***	(0.064)
Local Ingredients	0.831 ***	(0.220)
No-buy	-9.878 ***	(1.035)
	S.D.	
English	1.717 ***	(0.180)
Locally Brewed	0.313	(0.216)
Local Ingredients	1.239 ***	(0.300)
Error Component	14.009 ***	(1.254)
N	20,070	
Log-Likelihood	-3182.209	
AIC	6394.418	
BIC	6513.023	

Standard errors in parentheses. * p<0.05, ** p<0.01 *** p<0.001.

Table 3: Marginal WTP estimates

	WTP			
Variable	Mean	S.E.	95 Conf.	Intervals
English	-2.701 ***	(0.554)	[-3.787	-1.615]
Locally Brewed	1.011 ***	(0.225)	[0.570	1.452]
Local Ingredients	2.667 ***	(0.716)	[1.265	4.069]
Nobuy	-31.665 ***	(0.758)	[-33.152	-30.179]

Standard errors in parentheses. * p<0.05, ** p<0.01 *** p<0.001.

Table 4: SUR Estimates

	English		Locally Brewed		Local Ingredients	
Constant	2.391	(2.234)	0.758*	(0.321)	0.714	(1.373)
Age	-0.012	(0.030)	-0.001	(0.004)	0.004	(0.018)
Place of residence						
Urban area	1.146	(0.773)	0.128	(0.111)	1.188*	(0.475)
Craft Beer Frequency						
Periodically	-1.380	(1.131)	0.122	(0.163)	0.725	(0.695)
Rarely	-1.680	(1.183)	-0.089	(0.170)	0.955	(0.727)
Never	-3.337*	(1.759)	-0.222	(0.253)	0.993	(1.081)
Gender: female	0.608	(0.798)	-0.217*	(0.115)	0.034	(0.490)
Education Level						
Undergraduate studies	-0.548	(0.957)	-0.015	(0.138)	0.373	(0.588)
Graduate/postgraduate studies	-1.411	(0.879)	0.114	(0.126)	0.264	(0.540)
Higher/High income	0.636	(0.981)	0.130	(0.141)	-0.372	(0.602)
Desire to taste/drink something local						
Unimportant	-2.542	(2.157)	-0.159	(0.310)	-1.766	(1.325)
Neither important, nor unimportant	-2.483	(1.669)	-0.244	(0.240)	-2.271*	(1.025)
Important	-2.907	(1.813)	-0.144	(0.261)	-2.247*	(1.114)
Very important	-4.293*	(1.746)	0.044	(0.251)	-1.254	(1.073)
Compared to industrial, craft beers are:						
Equally high quality	0.488	(0.808)	0.150	(0.116)	1.006*	(0.497)
Inferior quality	-0.532	(1.722)	0.042	(0.248)	1.184	(1.058)
I prefer ...						
Indifferent between Croatian/Imported	1.182	(0.834)	-0.206*	(0.120)	-0.224	(0.512)
Imported beer	2.098	(2.965)	-1.603**	(0.426)	-6.814**	(1.822)
I prefer						
Indifferent	-0.716	(1.001)	0.171	(0.144)	0.144	(0.615)
without eco-label	3.457*	(2.059)	0.831**	(0.296)	3.501**	(1.265)
Importance of: Because that's how I help the local economy						
Unimportant	-0.139	(1.477)	0.203	(0.212)	1.281	(0.908)
Neither important nor unimportant	1.315	(1.463)	0.444*	(0.210)	2.232*	(0.899)
Important	-0.339	(1.553)	0.254	(0.223)	0.262	(0.954)
Very important	0.473	(1.944)	0.592*	(0.280)	2.212*	(1.195)
I prefer						
Indifferent	-2.085*	(0.905)	0.126	(0.130)	-0.302	(0.556)
No mark of local origin	-2.413	(1.731)	0.107	(0.249)	-0.029	(1.064)
R-sq	0.202		0.236		0.230	
N			161			

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$