

JEL: M310

WILLINGNESS TO PAY FOR CRAFT BEER IN SLOVENIA

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Povzetek

Pivo je najbolj priljubljena alkoholna pijača na svetu. Čeprav ta pijača obstaja že tisočletja, je v zadnjih desetletjih po novi vrsti piva – mikrovarjenem pivu – čedalje večje povpraševanje, saj ga kupujejo ne le poznavalci, temveč tudi čedalje širši krog prebivalstva. Povečanje povpraševanja po mikrovarjenem pivu je dokaj nov svetovni fenomen, ki ga nekateri pripisujejo spreminjanju okusa potrošnikov. Priljubljenost mikrovarjenega piva je k vstopu v panogo privabila številne nove proizvajalce. To velja tudi za Slovenijo, kjer se je število pivovarn povečalo z 22 v letu 2010 na 62 v letu 2016. Kako je mogoče pojasniti, da se proizvodnja mikrovarjenega piva tako povečuje, ko pa povpraševanje po tradicionalnih vrstah piva, zlasti v razvitih državah, stagnira?

Odgovor je v uspešnem prizadevanju ponudnikov mikrovarjenega piva, da prepričajo potrošnike s poudarjanjem kakovosti in ekskluzivnosti. Tako se vse več potrošnikov zaveda, da »vsa piva niso narejena enako« in so za vrhunsko pivo – to seveda ni običajno, »tradicionalno«, temveč mikrovarjeno pivo – pripravljeni plačati več. Ta »nova« vrsta piva, mikrovarjeno pivo, je prinesla močan nov veter v sicer dokaj ustaljeno, zrelo panogo proizvodnje piva. Še nedavno smo v restavraciji lahko naročili samo pivo – in so nas z njim tudi res postregli. V Sloveniji je bilo tako edino vprašanje »Laško ali Union?«, saj sta ti dve blagovni znamki desetletja nesporno obvladovali trg piva.

Namen članka je raziskati, kolikšno cenovno premijo so potrošniki pripravljeni plačati za mikrovarjeno pivo v primerjavi z običajnim pivom (svetlim ležakom), in kateri dejavniki vplivajo na to premijo. Da bi pridobil potrebne podatke, sem marca 2018 izvedel spletno anketo, v kateri je sodelovalo 181 slovenskih pivcev piva. V anketi sem se osredotočil na ugotavljanje cenovne premije mikrovarjenega piva v barih in restavracijah. Cenovno premijo sem ocenil z metodo pogojnega vrednotenja in izraženih preferenc.

Rezultati raziskave kažejo, da so anketiranci za mikrovarjeno pivo – v primerjavi s tradicionalnim ležakom po svoji izbiri, ki bi stal 2,40 evra – pripravljeni plačati premijo v višini 1,35 evra. Ugotavljam, da se je povpraševanje po mikrovarjenem pivu izkazalo za cenovno prožno. Starost anketirancev je na cenovno premijo za mikrovarjeno pivo vplivala negativno, njihov dohodek pa pozitivno. Izkazalo se je tudi, da dve lastnosti, povezani s pivom, statistično pomembno vplivata na cenovno premijo: pomembnost, ki jo potrošniki pripisujejo ceni, in stopnja vsebnosti alkohola v pivu – prva je s premijo povezana negativno, druga pozitivno.

Ključne besede: koliko so potrošniki pripravljeni plačati, mikrovarjeno pivo

Abstract

While beer has been around for millennia, in recent decades a new variety – craft beer – has seen a global explosion in popularity. To shed light on recent developments in the Slovenian beer industry, this paper investigates how much more people are willing to pay for craft beer compared to traditional (lager) beer, and what factors influence this price differential. Based on an online survey of Slovenian beer consumers, willingness to pay (WTP) for craft beer in restaurants and bars is assessed via the contingent valuation method. The results show that, on average, respondents are willing to pay a premium of €1.35 for a serving of craft beer compared to the lager of their choice, which is priced at €2.40. Perhaps unexpectedly, demand for craft beer proved to be elastic, with an own-price elasticity of -1.8. The craft beer premium was negatively affected by respondents' age and positively by their income. Two beer-related attributes proved to statistically significantly affect WTP: the importance placed on price and level of alcohol content, the first lowering and the second increasing WTP.

Keywords: *willingness to pay, craft beer*

1 Introduction

Beer is the most consumed alcoholic beverage in the world. While beer itself has been around for millennia, in recent decades a new variety – craft beer – has seen an explosion in popularity, moving from the fringe of niche consumption towards that of the general population. This explosion in craft beer is a fairly new global phenomenon, attributed to shifting consumer tastes (Canback, 2019). The popularity of craft beer has enticed numerous new producers to enter the market. This finding also applies to Slovenia, where the number active breweries increased from 22 in 2010 to 62 in 2016 (Brewers of Europe, 2017). With the general beer category experiencing limited to no growth – particularly in developed countries, why is the beer industry so enticing to enter?

The answer lies in the premiumisation of beer – a higher willingness to pay for superior beer, which primarily comes in the form of craft beer. In other words, consumers are realising that “not all beer is created equal”, and craft beer has successfully differentiated itself from what is perhaps known as regular “traditional” beer. In fact, this “new” product category, craft beer, has rattled a stale and mature industry.¹ It was not that long ago that one could go into a restaurant and just order “a beer” and, without any further questions or clarifications, be brought one. In Slovenia, the only follow up question to such an order might be “Laško or Union?”, the brands that held an undisputed duopoly for decades.

The definition of craft beer – while varying widely from country to country – is typically based on brewing capacity. A common theme in the definition is the restriction on brewing capacities, which is why craft beer is synonymous with microbrewed beer (see the discussion of the definition of craft beer by Garavaglia & Swinnen, 2017a). In Slovenia, the definition of a microbrewery is one that does not exceed the production of 20,000 hectolitres in a year (Štamcar, 2015). In the United States, where the modern craft beer movement is considered to have originated, the definition is extended to include (i) metrics related to ownership of the brewery and (ii) the permissible ingredients used in beer production.² As is clear from the above description, this type of beer is costlier to produce both because brewers cannot take advantage of economies of scale and because they face higher input costs due to the superior quality of their ingredients (Garavaglia & Swinnen, 2017a).

To shed light on recent developments in the beer industry in Slovenia, the purpose of this paper is to investigate how much more people are willing to pay for craft beer compared to traditional (lager) beer, and what factors influence this price differential. In particular, the paper tests the following four hypotheses:

- Hypothesis 1: Consumers are, on average, willing to pay a price premium for craft beer over traditional beer.
- Hypothesis 2: Demand for craft beer is inelastic. Given the large increase in the consumption of craft beer, one may assume that persons choosing such beer do not regard traditional beer as a close substitute for craft beer and may thus be relatively insensitive to price (for the U.S., for example, Toro-González et al., 2014, found that demand for craft beer is inelastic).
- Hypothesis 3: A price premium for craft beer over traditional beer is negatively affected by a person's age and positively by his or her income (in line with the findings, for example, of Gabrielyan et al., 2014, for U.S. beer drinkers).
- Hypothesis 4: The price premium for craft beer over traditional beer is related to the importance placed on the perceived beer attributes such as taste, aroma, and origin (again in line with Gabrielyan et al., 2014, who find that the overall taste and hoppiness of a beer affects WTP).

To obtain the necessary information, in March 2018 I carried out an online survey of 181 Slovenian beer consumers, using the convenience snowball sample. I focused on willingness to pay (WTP) for craft beer for on-trade consumption, i.e. consumption in bars and restaurants. I assessed WTP using the contingent valuation method, specifically, an iterative bidding game, thus using the stated preference approach as the basis of measurement.

The results of my survey show that, on average, respondents were willing to pay a premium of €1.35 for a serving of craft beer compared to the lager of their choice (for which the hypothesised price was set at €2.40). Perhaps unexpectedly, the demand for craft beer proved to be elastic, with an own-price elasticity of -1.8. The craft beer premium was negatively affected by respondents' age and positively by their income. And two beer-related attributes proved to statistically significantly affect WTP: the importance placed on price and level of alcohol content, the first lowering and the second increasing WTP.

The paper proceeds as follows. Section 2 describes trends and developments in the beer market. Both global trends as well as trends in the Slovenian beer market are presented, with special attention devoted to the entry of microbreweries. Section 3 defines the concept of WTP and explains the way it is measured in the case of craft beer, presents key dilemmas in

¹ Such a development is even more impressive given the important cost disadvantages craft beer producers are subjected to. For example, due to their small scale of production, craft beer producers – unlike the market leaders – produce beer at only one location and therefore face considerably higher per-unit transportation costs.

² In reality, the distinctions between craft and other types of beer are blurred, *inter alia* because large companies such as Heineken and AB InBev are launching their own brands of craft-style beers or merging with small breweries. Euromonitor (2017) also points out the ambiguity of the definition of “craft beer”.

formulating the questionnaire, and describes the survey implementation. The results of the survey – obtained by testing the stipulated four hypotheses – are presented in Section 4. The last section concludes by interpreting the findings and deriving implications for the marketing of craft beer.

2 Trends and developments in the beer market

Ordering a beer today is much more difficult than it was 10 years ago. Up to the recent past, in Slovenia the only dilemma was whether to select Laško or Union, that is, which one of the two major brands which held an undisputed duopoly for the past century or so. Nowadays, the choice is not so simple. The selection process is no longer centred around brands, but rather the styles of beer, a trend which has been labelled as “consumer promiscuity” when it comes to choosing beer (see, for example, ROTHCO, 2019). As a result of these new, modern styles of beer, brand loyalty has plummeted. New styles of beer are often grouped under the generic term of “craft” or “microbrewed” beer, and they stand against the prominent and overly abundant lager beer which has been the default style of beer since the Industrial Revolution. And perhaps not surprisingly, not only has the selection of beer increased, but so has its price. These craft beers command a considerable price premium – generally, they are about 50 percent more expensive than their more traditional lager counterpart.

This section aims to put historic developments in the beer market in perspective. It starts by explaining the global scene by probing historical developments and trends in beer production. It continues with a discussion of the forces behind the entry – and proliferation – of microbreweries. It concludes by presenting trends in the Slovenian beer market.

2.1 Global developments and trends

This section presents the historical developments in beer production, arguing that until the premiumisation stage of beer development factors driving the supply side of the market were mostly responsible for the vast changes that have occurred.

Historical developments: how lager became king

Historically, the beer industry was characterised by many small producers. According to Howard (2014), until the 18th century natural barriers discouraged the formation of only a few producers dominating the market. First, since beer consists mostly of water, it was costly to transport – due to the worse transport infrastructure and systems in general, historically more so than today. In addition, early commercial brews

were ales and stouts, both of which spoiled rather quickly. These limitations prevented early brewers from selling their product on a larger scale, restricting the geographic reach of beer producers. Moreover, the simplicity of its main ingredients – water, malted grains, hops and yeast – provided little room for innovation and thus disabled a producer from differentiating itself and gaining a competitive advantage. Things have changed since then, as modern technology has changed the way we produce, and in turn, also the way we consume beer.

Several technological innovations laid the groundwork for the beer industry we see today, as well as for the most dominant style of beer, lager. In the eighteenth century, a more science-based approach to brewing beer was established. Better knowledge regarding the function of yeast – the ingredient responsible for the fermentation process and hence for producing alcohol in beer – led to improved brewing methods and thus to greater control of the production process. Such improved control enabled brewers to produce a reliable and consistent final product, and the resulting brewing method would give rise to the most predominant style of beer in the world today: lager. Lager, which in German literally means “storage”, overcame the main problem with beer at the time, a short shelf life. And a prominent scientific discovery also helped lager establish its dominant position – in the 1860s Louis Pasteur developed the “pasteurisation” method, which further extended beer’s shelf life (see Poelmans & Swinnen, 2011).

Along with several other scientific advances, the Industrial Revolution helped propel lager beer to its present-day dominance and commercial success. The invention and later improvements of the steam engine allowed beer to be transported faster as well as across greater distances, as they provided recourse to more advanced and efficient modes of transportation. Moreover, the invention of refrigeration allowed breweries to produce lager year-round, thus not only in the winter months (the brewing of lager requires cooling, see Meusssdoerffer, 2009).

Many other major innovations helped with the storage and manufacturing of beer. Before the 1860s, glass bottles had to be hand-blown and as a result were relatively expensive. The invention of the “chilled iron mould” allowed brewers to mass produce glass beer bottles at a fraction of the cost. Bottling beer in glass bottles enabled it to be transported greater distances and to be preserved in a better fashion, particularly on longer journeys, as opposed to the traditional method of storing it in casks. Just as important were the innovations when it came to sealing the beer. Initially, various types of corks were used, similar to the ones used in wine. By 1892, a metal-based seal was used, the same one that is used for glass bottles today, the “crown cork”, enabling brewers to develop automatic bottling

machines (Swinnen, 2011). By the first half of the 20th century, metal cans were being used and popularised in the United States, eventually making their way to Europe and the rest of the world.

These discoveries and innovations helped bring down the price of beer, made it available to a larger audience, and delivered a product with consistency. At the same time, they also contributed to the homogenisation and blandness of beer over the past century (the aspect that eventually made room for the emergence of craft beer – see below), as well as to consolidation within the industry. The modern machinery and brewing methods led to the mass-production of beer, and as a consequence, companies needed to achieve economies of scale in order to stay competitive.

Declining global beer sales have forced established brewers into mergers and acquisitions. Looking at data from 2012, the top four brewers accounted for roughly half of global beer sales by volume and 70 % by revenue (SABMiller, 2012). Compared with ten years prior to that, the top 10 firms accounted for less than half of global sales. Fast forward to 2016 and we have the fifth largest ever acquisition in history, where the world's biggest brewery AB InBev acquired the second biggest, SABMiller, for \$90 billion. The new brewing behemoth will be responsible for the production of nearly 3 in 10 beers consumed around the world (Business Insider, 2016). While some market share was gained internally through sales growth, most has occurred from consolidation through mergers, acquisitions and joint ventures, with the primary goal of expanding into new geographic areas (Howard, 2014).

To summarise the developments in the beer industry, a suitable tool is the concept of the J-curve.³ According to this framework, a product's life cycle is divided into four stages (Canback, 2016). In the first, the artisanal stage, a large number of breweries coexisted, each operating in a limited geographic space, as beer was manufactured in small batch production and sold locally, limited by slow and costly transport and short shelf life. In the mass-production stage – coinciding with the Industrial Revolution – numerous technical improvements helped streamline the production of beer and utilised scale economies, driving down the price, thus reducing the number of beer producers. In the homogeneity stage, maximum efficiency is reached as beer becomes standardised, synonymous with clear lagers, and the industry becomes extremely concentrated. Consumers lose interest in the product due to the lack of diversity. That sets the stage for the advent of the premiumisation stage (which we are still witnessing): producers

emphasise the superior quality and exclusivity of their products, while trying to attract wealthier consumers, who are willing to pay more for better, "premium" products. The quality of ingredients is improved, the location of production assumes a more prominent role, as does the overall appearance of the authenticity of the product, providing fertile ground for the emergence of craft beer.

According to the J-curve concept, the beer market has completed a full circle: it started with many producers, it shrank to a few, and has gone back to many. In the long history before mass production, all beer was by definition craft and microbrewed beer. As described above, innovations in the production of beer and overall advancements in technology allowed the mass production of a homogeneous product, and in contrast, the latest trends in craft production represent a return to the roots. In contrast to the first three stages of the J-curve, the key factor affecting the premiumisation stage is consumer demand. In this stage, producers cater to the newly developed, diverse needs of consumers by offering them differentiated products. And as predicted by the theory of monopolistic competition, such differentiation allows them to increase the price of beer.

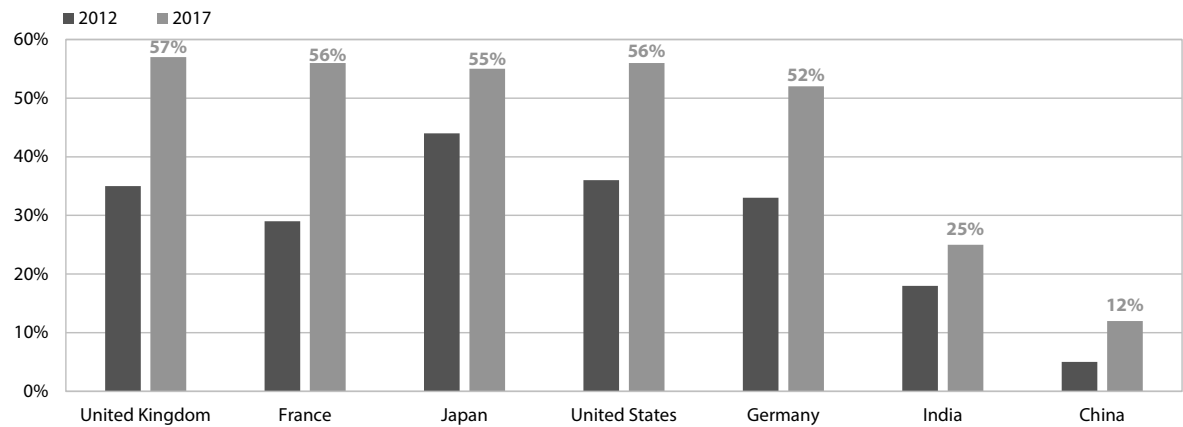
The entry of microbreweries

With the strong cost-cutting effects of economies of scale, the beer market toward the end of the 20th century was a tough, competitive environment to enter. New breweries could not compete on price, and they had to differentiate themselves in a different aspect: taste. Fortunately for microbreweries, it was not that difficult to do so – the homogenisation of mass-produced beer had made different lagers practically indistinguishable from each other, contributing to the emergence of what is sometimes labelled "industrial beer". One of the foremost scholars of craft beer, Glenn Carroll, stated that "The people behind the microbrewery movement, in an almost moralistic and evangelical way, thought that beer had become disgusting" (George, 2002).

Many drivers behind the shift in consumer preferences in recent decades can be seen as a pushback to capitalism and globalisation. These grievances are perhaps most apparent in the political arena, where a rise in nationalist, populist, and anti-immigrant rhetoric has taken hold in numerous countries around the globe, most notably with Trump and Brexit at the helm. While globalisation is generally recognised as a force which diminishes distances in the world, "levels the playing field", and makes the world smaller through the internet-of-things and connectivity, it is also increasingly being blamed for enabling power and resources to become more concentrated and unevenly distributed. Hence the emergence of anti-neoliberalism, the vilification of multinational corporations, and the championing of local, community producers. The so-called "race to

³ The J-curve evolution of an attribute means that the attribute's graph is shaped like the letter 'J', that is, the quantity in question in the initial period diminishes and gradually reverses its trend towards growth (Canback, 2016).

Figure 1: The rise of distrust toward large brands and companies worldwide (the percent of consumers with little or no confidence in large corporations and brands)



Source: ATKearney (2017).

the bottom” – multinationals leveraging their power to maximise their benefits by locating facilities in places with the lowest environmental standards, lowest wages and taxes, or both – have contributed to the distrust consumers have for multinational corporations, which is present not only in developed countries but also in China and India (see Figure 1).

Also related to anti-globalisation sentiment is the pursuit of the “authenticity” of products. Being socially constructed and context-specific, there is no objective definition thereof. Carroll (2015) points to two main kinds of authenticity. The first kind is “type” or genre authenticity, which refers to whether or not a product possesses traits that are characteristic of a certain product category. In the case of beer, this form of authenticity deals primarily with the quality and type of ingredients used (what type of hops was used), the production process (was it top or bottom fermenting?), and the taste of the final product (does it taste like an IPA should?). If the answers to these questions are ‘positive’, then the product is deemed to be of the authentic “type”.

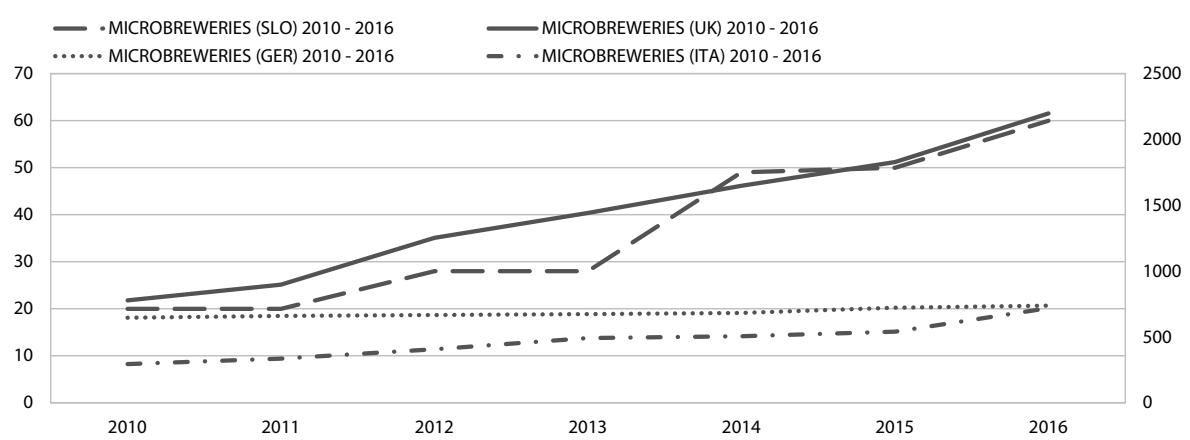
The second kind of authenticity is “moral” authenticity and relates not so much to the product but rather to the organisation or firm-producer itself, and to the way it operates. Questions pertaining to this form of authenticity revolve around the motivations and goals of said brands or companies, such as whether they are driven solely by profit or are genuinely concerned about their community, environment, human well-being, etc. Moral authenticity encompasses the virtues which marketers refer to as a “lifestyle brand” and is usually accompanied by phrases such as organic, cruelty free, ethically sourced, not-tested on animals, and locally made. This new emphasis placed on authenticity by consumers transcends the imperative of location and borders and puts ethics and moral values higher on the list of priorities (Carroll, 2015).

Favouring local brands over international ones is by no means a new phenomenon. Shimp and Sharma (1987) developed the concept of “consumer ethnocentrism”, according to which consumers view a foreign product as inferior to their own. Contrasting consumer ethnocentrism is the “country of origin” effect, in which consumers view goods produced in countries with a well-known tradition and history of producing them as superior to goods produced elsewhere. In the case of the beer market, sticking to the “country of origin” principle would concentrate market share in the hands of brewers from countries with a strong tradition and history of brewing beer (such as Belgium and Germany). In fact, this is the case when looking at macrobrewed beer, as the three largest breweries controlling a whopping 42 percent of the global beer market – AB Inbev, Heineken and Carlsberg are headquartered in Belgium, the Netherlands and Denmark, respectively – all come from nations with a rich tradition of brewing. However, this new idea of authenticity transcends the country-of-origin effect in that it places a greater emphasis on locally produced, and in many cases sourced, ingredients and labour.

The trends described above are perhaps most pronounced among the millennial generation.⁴ The millennial generation has been touted as one of the biggest consumer groups leading the movement toward more local, artisanal and craft products and less of the mass-produced, homogenous products of the past few decades (Daneshkhu, 2018). This can be at least partly attributed to the widespread use of the internet by millennials, providing them access to more information than ever before, educating them on evolving social, cultural and political landscapes (ATKearney, 2019).

⁴ While there is no universally agreed upon definition, most label those born anywhere between the early 1980s and late 1990s as millennials (for example, Posard et al., 2018, refer to millennials as those born between 1982 and 2000).

Figure 2: The number of microbreweries in Slovenia and selected European comparators, 2010–2016



Source: Euromonitor (2018). Note: The number of microbreweries in Slovenia is shown on the left axis, and for other countries on the right axis.

What is quite telling is the proliferation of craft beer apps, which are uniquely suited to serve the needs of localisation and authenticity, among others. They not only provide up-to-date information about local producers, including customer reviews, but also offer sales venues, lists of top-rated beers and breweries, and information about special events. Moreover, they enable the customisation of one's own personal beer palate by providing a rating of beers the customer has already tried and suggesting new beers that he or she might want to taste. And they also offer advice about being "politically correct": they provide information whether a particular product that may have a craft beer label is, in fact, produced by big breweries (such as "Blue Moon", produced by Anheuser-Busch and Miller), as some customers may prefer not to consume such products.⁵

In addressing anti-globalisation sentiments, businesses are inventing new ways to succeed in the changed environment. In the early 1990s, "glocalisation", a buzz word and business strategy utilised by multinationals, was all the rage. The strategy was centred on developing and distributing products globally but still tailoring them to accommodate the needs of regional and local markets. However, nowadays it is not enough for McDonalds to offer a Chicken Maharajah Mac to ensure its success in India; the ingredients themselves must be sourced locally (Kannan, 2014) – the strategy labelled "multi-localism" (ATKerney, 2019).

Big breweries have been attempting to emulate microbreweries in three main ways. One way is through acquisitions, in line with the slogan "if you can't beat them, join them", or in this case, have them join you (Euromonitor, 2017). Emulating microbreweries can be difficult, however, as these takeovers can be withheld

from the public and consumers have no easy way of knowing that a particular microbrewery has "sold-out". Another method is masking their products, hiding the fact that the producer is a brand extension of a megabrewer, as opposed to an organically formed independent local producer. Such products have been dubbed so called "quasi-craft" brands (Canback, 2019). For example, Molson Coors, a megabrewer in a joint venture with AB Inbev, which caught on to the craft trend early on, launched its own craft brand of beer, Blue Moon. It has successfully tricked consumers into thinking that it is in fact a "craft" brand and provides a "craft" experience. And third, megabreweries are mimicking the marketing strategies of microbreweries. For example, instead of employing a mass-marketing campaign, which is the norm for such companies, they are sponsoring local events, utilising social media influencers, and expanding their grassroots image.

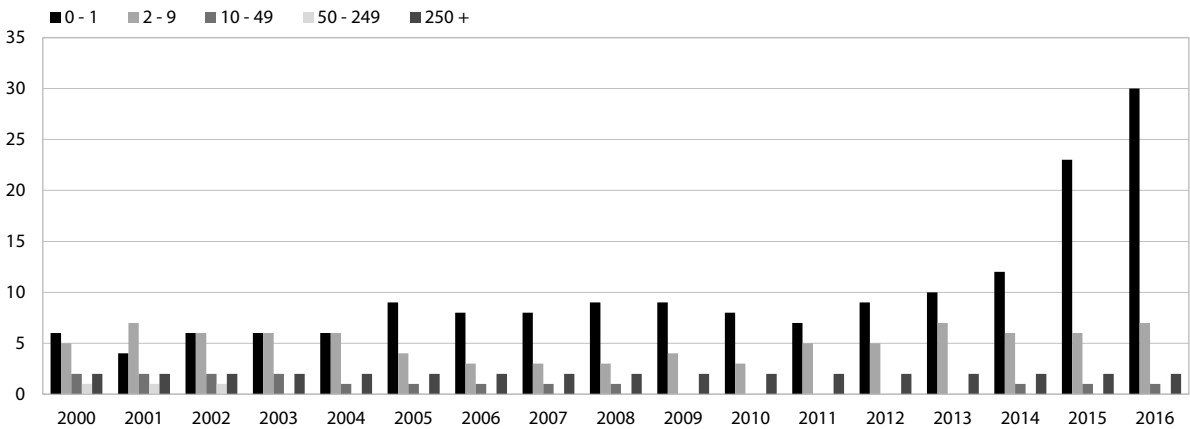
2.2 Trends in the Slovenian beer market

While Slovenia plays a minor role in the global beer market, domestic developments have mirrored those occurring globally. In addition, being on the periphery, the preferences of Slovenian beer consumers have also been shaped by the "exposure effect". Market power has become increasingly more concentrated. And as on the global scene, Slovenia saw incredible growth in breweries, all of which were microbreweries.

Since 2010, the number of microbreweries in Slovenia has considerably increased. According to Euromonitor (2018), in 2010 there were 20 microbreweries in Slovenia, with the number steadily increasing to reach 60 in 2016 (Figure 2). The growth in the number of microbreweries in Slovenia exceeded such growth in most European countries. The most remarkable growth in microbreweries in this period was experienced by the UK, where their number increased from below 600 to over 2000.

⁵ To appeal to millennials, some apps also use tricks such as enabling a mobile phone to resemble a glass of beer, a feature called "Virtual Beer/iBeer" (Braun, 2018).

Figure 3: The number of companies in beer production in Slovenia, by employment size (2000–2016)



Source: Statistical Office of Slovenia, personal communication.
Note: presented in the table is the number of active producers in a certain year (employing at least one person and/or posting positive revenues) of the subsector DA.15.960 for years 2000–2007 and 11.050 for 2008–2016, according to the standard classification of activities.

In Slovenia, microbreweries are by far the most dynamic firm-size category of beer production (Figure 3). While from 2000–2011 the number of microbreweries stagnated in a range from 6–9, starting in 2012 this number greatly increased, reaching 30 by 2016.⁶ Of course, during the whole 2000–2016 period there were only two producers occupying the largest size category – the two big Slovenian producers, Laško and Union. Interestingly, the size category of 2 – 9 workers showed very little dynamism, and quite notable is the “case of the missing middle”: there were virtually no firms in the size categories of 10 – 49 or 50 – 249 workers.

The two major players mentioned above, Laško and Union, have held an undisputed duopoly in the Slovenian beer market for the past several decades (Cerar, 2015). Union is in fact a product of a union – hence the name – of a number of small brewers that banded together. Laško acquired Union in 2005 under the guise of national interest, in order to fend off the other main bidder – Interbrew (now the biggest brewer AB Inbev), a foreign multinational corporation. The newly formed company was acquired by the global brewing giant Heineken a decade later in 2015 (Morozov, 2017).

The above trends in Slovenia have been shaped by several forces. On one hand, they echo the antiglobalisation sentiment, with Slovenian consumers strongly favouring local food and beverage products, ranging from fruit and vegetables, to type of flour and milk and dairy products. Being on the periphery, the preferences of Slovenian beer consumers have also been shaped by the “exposure effect”. Šušteršič

and Šušteršič (2013) demonstrate that an increase in imports following EU entry had two opposing effects on Slovenian beer producers. First and unsurprisingly, the increase in beer imports resulted in a decline in the production of domestic producers. Secondly, the increased diversity of types of imported beer had a positive impact on the volume of sales of small producers.⁷ The authors interpret the latter result by suggesting that imports of beer, by bringing more variety onto the market, induce domestic consumers to develop their tastes and appreciate different types of beer, which in turn induces demand for the products of domestic microbrewers (according to this interpretation, Slovenia has been a laggard in craft beer consumption). This result is completely in line with Swimanathan (1998, cited in Garavaglia & Swinnen, 2017b), who – in the case of the USA – also finds that the growth in beer imports stimulated the entry of new craft breweries, also attributing the effect to the development of the appreciation of new beer tastes via imported beers.

The growing number of Slovenian microbreweries (and imports) has strongly enriched the scope of beer supply. Some of the most popular Slovenian microbreweries include Carniola, Humanfish, LOO-BLAH-NAH, Maister, Mali Grad, Pelicon, Reservoir Dogs, Tektonic, and Vizir. Nonetheless, in 2018 Slovenian microbreweries had a market share of only around 2 percent and a production capacity for supplying up to 6 percent of domestic consumption (Morozov, 2018), thus still lagging substantially behind countries with more developed microbreweries (for example, the market share of microbreweries in the USA is 10 percent).

⁶ The number of microbreweries according to Statistical Office of Slovenia is only half of the number reported by Euromonitor, suggesting that the latter also includes producers whose predominant activity is outside beer brewing.

⁷ Šušteršič and Šušteršič (2013) also find that the increase in the diversity of small producers positively affected the volume of the sales of small producers.

3 Measurement of WTP for craft beer, questionnaire formulation and survey implementation

Smith and Nagle (2002, p. 2) define WTP as “the maximum price a buyer is willing to pay for a given quantity of a good or service.” In the study of microeconomics, WTP corresponds to a consumer’s reservation price (cf. also Le Gall-Ely, 2009). Initially, the concept of WTP was used to help calculate the monetary value of pure public goods, and conversely the cost associated with their negative externalities (air pollution, etc.).

One can distinguish two ways of measuring WTP: the stated preference and the revealed preference approaches (Bredert et al., 2006). The revealed preference approach measures WTP based on the actual purchasing decisions of a consumer as reflected in market data or in data generated by experiments (performed in either the field or laboratories). The stated preference approach, in contrast, infers WTP from answers to survey questions and is thus not based on the actual purchases of consumers.

There are pros and cons to both approaches. The revealed preference approach, while reflecting actual market behaviour and purchasing decisions, often falls short of capturing additional insights that would make the analysis more interesting and helpful. In other words, while the revealed preference approach most accurately answers the question “Do you buy product X at price Y?”, it is not equipped to handle other relevant questions, for example, “Why do you buy product X at price Y?” (Wertenbroch & Skiera, 2002). The stated preference approach, on the other hand, while capturing more comprehensive, richer data, lacks the accuracy and truthfulness of the revealed preference approach (Arrow et al, 1993). The stated preference approach is carried out in the form of interviews, questionnaires or focus groups, and because it takes place in an unnatural environment and because respondents are removed from the consequences of their decisions, the preferences expressed in such settings may not be truthful. Indeed, Le Gall-Ely (2009) reports that in comparison to the revealed preference method, stated preference methods lead to significantly higher estimates of WTP.

For the purpose at hand, I decided to use the stated preference approach. I thus avoided acquiring actual, market data on beer purchases – information that is proprietary and therefore difficult to acquire. Equally importantly, utilising the stated preferences approach allowed me to manipulate the price of craft beer itself and observe the response to the stipulated change in the price directly.

Once the stated preference approach has been selected, a further important choice relates to the setting in

which WTP for beer is estimated, above all, to choosing between on-trade vs. off-trade beer consumption (the former refers to drinking beer in restaurants and bars, and the latter to buying beer in retail outlets). Since craft beer is primarily consumed on-trade, I decided to focus only on on-trade consumption (see Euromonitor 2018 for the prevalence of craft beer consumption).

There are other reasons to focus on on-trade consumption related to the fact that off-trade selling points typically employ practices that complicate customer’s buying decision process. Off-trade selling points such as grocery stores often have a plethora of offerings for the same product – in the case of beer, four-packs, six-packs, 24-packs, and beer bottles and cans also come in different sizes – and each offering is priced differently per unit. Moreover, the prices of products are often set so as to end in odd numbers, often with a 9 (see the discussion about such pricing of, for example, Gueguen & Legoherel, 2004). Such practices make decisions more difficult, particularly as in grocery stores there are many stimuli demanding our attention, putting a strain on our capacity to process various information. In addition, off-trade customers have to deal with “strategic” purchasing decisions about the timing of consumption (they may want to buy in order to stock up), about purchases for special occasions, etc, all of which affect their WTP. In contrast, purchases made on-trade are vastly less complicated, as the consumer only needs to focus on immediate consumption and there are many fewer considerations to be made, such as who will consume what, how many and when. With a customer’s buying decision process simplified, it is easier to pin down such a complex concept such as WTP.

To ensure both the reliability and validity of the survey, creating *ceteris paribus* conditions when measuring WTP for craft beer was of utmost importance (cf. Litwin, 1995). This was achieved by making sure that the questions asked contained all the necessary information – “controls” – about the postulated circumstances of beer drinking, so that the conditions under which price comparisons were made were identical for all interviewees.⁸ An important control was ensuring a similar location of the hypothesised beer consumption. Thaler (1985) provides an example of a study where the estimated WTP for a cold beer greatly differs depending on the location of the purchase (resort vs. grocery store). Accordingly, WTP related to off-trade purchases is subject to various extraneous factors that, unless their impact is accounted for, cloud the measurement of WTP. In contrast, the focus on on-trade consumption automatically introduces important controls, including

⁸ In a similar vein, some other studies of WTP directly determine the external circumstances affecting WTP – for example, in their study of WTP for the sensory attributes in beer, Gabrielyan et al. (2014) selected four beers specifically brewed to have different levels of hops and bitterness, and then asked respondents to evaluate the sensory attributes of those beers using the contingent valuation method.

controlling for location. In my questionnaire I therefore defined the precise location for which WTP is measured, explicitly mentioning Ljubljana-centre as the location where price comparisons were to be made.

Another important feature to control for is single serving quantity, that is, the unit of measurement for the quantity of beer the question relates to. This is not an easy task. Producers of craft beer are aware of their higher price, and they often package their product so as to make comparisons with the cheaper, macrobrewed variety of beers more difficult. For instance, Bevog, perhaps the most well-known and established Slovenian craft beer producer, does not sell its product in standard 500 millilitre units, but rather in 330 millilitre bottles and cans. The only way to purchase a 500-milliliter product from Bevog is to buy a draught beer on-trade (in that case, setting the price is up to the final establishment). It is not strange to see other irregular sizes amongst product offerings, such as 355, 450 and 650 millilitre offerings. In addition, producers try to confuse customers by selling beer in glass bottles as well as in cans, with prices differing between the two.

And of course, the survey also had to remove any confusion of the respondents as regards what precisely is understood under the term “craft” beer. As mentioned above, although the definition of craft beer varies from country to country, it is typically defined based on the capacity limit of the brewery. Moreover, another trait – artisanal production – is also often associated with craft beer and so different terms, oftentimes used interchangeably, are used for craft beer: “microbrewed” and “artisanal” beer, although they do not necessarily mean the same thing. To make things worse, oftentimes “craft” is conflated (lumped together) with styles of beer, primarily IPAs, pale ales, ales, porters and the like. Such labelling is confusing to the consumer – and it can be frustrating for a researcher, because consumers have different ideas of what “craft” beer means, and the measured WTP may be affected by those differences. Therefore, to provide a clear definition of what craft beer is – output-based definitions are not very helpful because consumers have few ways of knowing the outputs of various breweries – I used terminology most commonly associated with both type of beers: when referring to craft beer I added the word “microbrewed”, and when referring to traditional beer I added the word “lager”.⁹

Given this largely uncharted territory of beer labelling, I found an effective way of informing my respondents in order to differentiate craft vs. traditional beer through the questionnaire itself. In a separate question, I asked

the respondents which beer brand they consume most frequently – for both traditional and craft beer – and then, when providing the answer, I indicated the beer type of their brands in the questionnaire itself. In that way respondents familiarised themselves with the beer type they most frequently consume. That clarified the questions that followed, as the respondents learned the difference between the two beer types and were thus better equipped to answer the subsequent questions regarding WTP. Moreover, by personalising the questions, I attempted to elicit a more truthful response. So, instead of posing more generic questions as in the pre-test, the question with a piped in response would read (assuming the previous answers regarding the most commonly preferred traditional and craft beers were Union and Bevog, respectively): “Would you choose Union beer over Bevog, if Union costs €2.40 and Bevog costs €4.00? (Prices are fixed to the location Ljubljana-centre.)”¹⁰

In questions soliciting information about WTP for craft beer, I thus used a closed-ended contingent valuation with a double-bounded dichotomous choice (Le Gall-Ely, 2009).¹¹ Respondents were presented with a scenario in which they were asked to choose between a traditional lager beer, which costs €2.40, and a craft beer, which costs €4.00 (see above). The question that followed represented the same scenario, with the only change being the price of the craft beer which, depending on their previous answer, either increased or decreased. This scenario repeated itself at least two or three times in the subsequent questions.

The questionnaire also contained several other questions. First, I included a question about the importance respondents placed on various beer characteristics, to examine whether these characteristics affected WTP for beer. Second, price was included among the beer characteristics, and respondents were asked about the importance of price in their beer consumption, so as to be able to check the internal consistency of the answers to WTP questions. And third, I included questions regarding demographic data (age, completed education, and labour market status).

The survey was implemented via an online questionnaire, using a convenience snowball sample. The biggest shortcoming of such sample is its unclear representativeness of the entire population, as respondents are selected in a non-random fashion (see

⁹ There is also a drawback to such labelling, though, because the categories of beer formed in this way are not mutually exclusive. For instance, lager, the style which I label as macrobrewed and traditional, can in fact be “craft” beer if it is produced in a brewery that fits the guidelines for producing “craft” beer. In practice, however, there are virtually no craft lagers on the market.

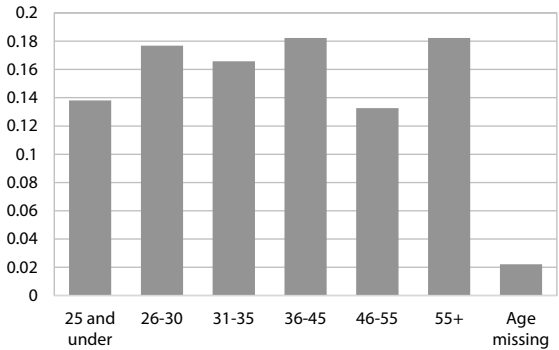
¹⁰ The pre-test of the questionnaire – conducted via a personal interview of 25 respondents in Ljubljana’s city centre – revealed several shortcomings of the pre-test-version of the questionnaire that were subsequently corrected. Above all, the questions eliciting WTP were modified as indicated above (the pre-test version of such question was: “Would you choose traditional lager (e.g. Union or Laško) beer over craft, if the lager costs €2.40 and the craft (microbrewed) costs €4.00?”).

¹¹ Arrow et al. (1993) stress that open-ended questions (such as “What is the maximum amount you would be willing to pay for this offer?”) are prone to overstatement.

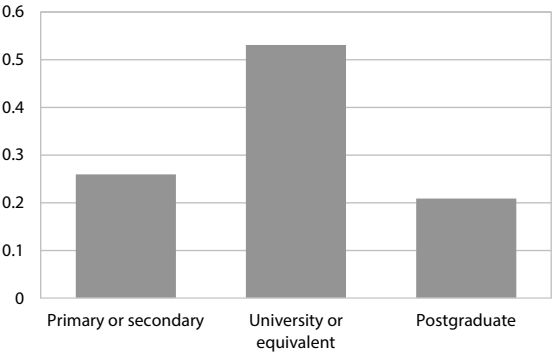
Evans & Mathur, 2005). In total, the survey was taken by 181 respondents with valid responses. The personal characteristics of the respondents are as follows:

- The share of females was 26.7 percent.
- The average age of respondents was 40.1 years (see the age distribution in Figure 4, Panel A).
- Over 50 percent of the respondents had a university degree or equivalent, and 21 percent had postgraduate education (see the age education distribution in Figure 4, Panel B).
- A large majority (72.9 percent) of respondents were employed, 6 percent were unemployed, and 21 percent were out of the labour force (see the labour force status distribution in Figure 4, Panel C).

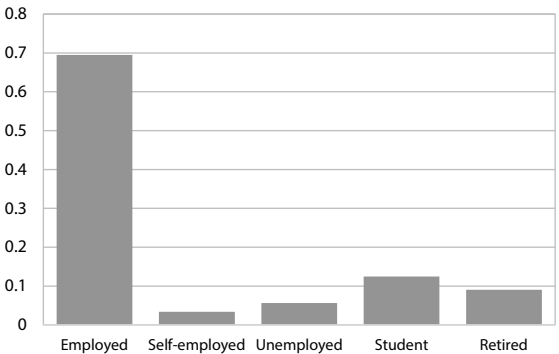
Figure 4: The distribution of respondents by age, education and labour force status
Panel A: Distribution by age



Panel B: Distribution by education



Panel C: Distribution by labour force status



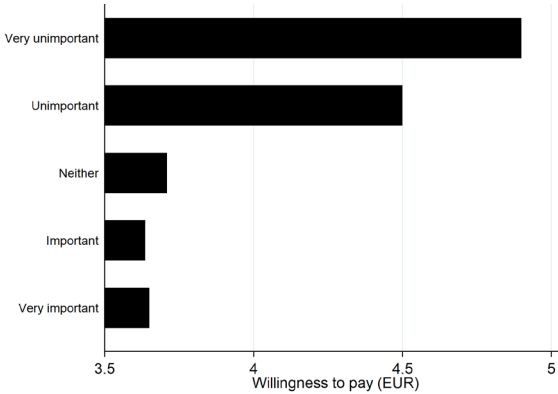
Source: Own survey of WTP for craft beer in Slovenia.

4 The results of the survey on WTP for craft beer in Slovenia

The summary statistics of key beer-related questions are presented in Table 1. Above all, the mean value of WTP – the key variable of interest – is €3.75, meaning that, on average, the respondents were willing to pay €1.35 more for craft beer than for the lager of their choice (for which the hypothesised price was set at €2.40, see Section 3). When choosing beer, the following attributes proved to be most important: taste, drinkability, aroma and price, each having a mean value above 3. Similarly, when choosing among unknown beers, the following attributes proved to be the most important: beer style, price, manufacturer's reputation, and also the design of the label. Accordingly, price considerations play an important role in decisions about buying both beer that consumers are familiar with as well as those that they have not yet tasted.

At this point, we can also verify the internal consistency of the responses about WTP. As explained in Section 3, in addition to posing questions soliciting information about WTP, each respondent was also asked to evaluate the importance he or she places on various beer attributes, one of them being price. As shown in Figure 5, there is a clear correlation between the importance the respondents place on price and WTP, with those attributing higher importance exhibiting lower WTP, suggesting that the responses about WTP are indeed internally consistent.

Figure 5: WTP for craft beer by perceived importance placed on price



Source: Own survey of WTP for craft beer in Slovenia.

Table 1: Mean and variance of selected beer-related questions

	Mean	Variance
WTP	€3.75	€1.74

Beer attributes I

(based on survey question 41: When choosing beer, how important are the following attributes, with 1 – very unimportant and 5 – very important)?

Taste	4.70	0.45
Price	3.48	0.82
Geographic origin	2.55	1.54
Aroma	4.20	0.69
Drinkability	4.43	0.48
Level of alcohol content	2.65	1.12
Brand	2.52	1.22

Beer attributes II

(based on survey question 44: When choosing among **unknown beers**, how important are the following attributes of beer or the circumstances of sale, with 1 – very unimportant and 5 – very important)?

Design of the label	3.01	1.22
Beer style (IPA, ale, stout)	3.79	1.06
Origin of the brewery	2.91	1.24
Price	3.55	0.79
Beer promotion/happy hour	2.90	1.25
Manufacturer’s reputation	3.06	1.17

Source: Own survey of WTP for craft beer in Slovenia.

Testing Hypothesis 1: “Consumers are, on average, willing to pay a price premium for craft beer over traditional beer.” Checking this hypothesis consists of a one-tailed t-test whether the sample mean of the measured WTP (\bar{x} =€3.75) is statistically significantly greater than €2.40 (the price of the traditional lager beer with which the craft beer was compared to):

$$t = \frac{\bar{x} - \mu_0}{s / \sqrt{n}}$$

(1)

Where $\mu_0 = 2.40$ (the null hypothesis), $s = 1.32$ is the standard deviation of the sample WTP, and $n = 181$ is the number of observations in the sample. Calculations show the value of the t-test is 13.82, with the p-value being smaller than 0.0001. The probability that the null hypothesis is true – that is, that a price premium for craft beer over traditional beer is zero – is thus below 0.01 percent, hence the null hypothesis of a zero price premium is rejected. This confirms Hypothesis 1.¹²

¹² For comparison, using a similar approach – applying the contingent valuation method to evaluate consumers’ WTP for the sensory attributes of different kinds of craft beer – Gabrielyan et al. (2014) found that US consumers are willing to pay 41 cents (5.9 percent) more for a six-pack of a specific beer whose taste was rated one unit higher on a nine-point Likert scale.

Testing Hypothesis 2: “Demand for craft beer is inelastic.” Testing this hypothesis requires an empirical estimation of the own-price elasticity of demand for craft beer. The data needed for this estimation have been generated by the survey. Below I present a graphical depiction of the relationship studied, describe the empirical model to be estimated, and present the empirical results.

A useful first exploratory step of the elasticity analysis is the graph presenting willingness to pay for craft beer on the vertical axis and the number of respondents that expressed willingness to purchase craft beer at the indicated level or above it on the horizontal axis (Figure 6). The information was obtained from the key survey questions eliciting WTP for craft beer. The presented line is an approximation of the demand curve for craft beer. As seen from the graph and in line with the theoretical predictions, the slope of the line is negative – for a craft beer all respondents are willing to pay €2.00 or more, three quarters €2.50 or more, one half €3.50 or more, one quarter €5.00 or more, and 5 percent of respondents €6.00.

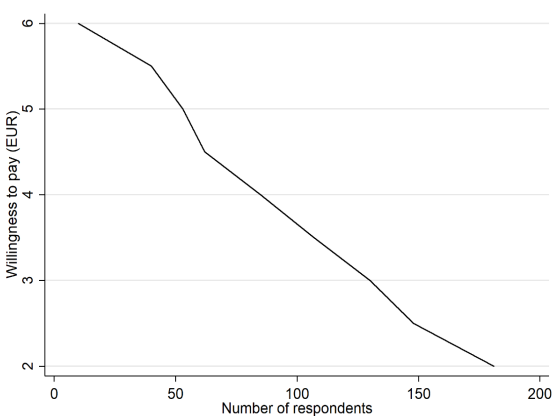
Empirical estimation of the own-price elasticity for craft beer was performed as follows. The own-price elasticity of demand for a certain product is defined as the ratio of the proportional change in the quantity of

Table 2: Estimates of own-price elasticity for craft beer, aggregate and by age group

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Aggregate	Age: 25 and under	Age: 26-30	Age: 31-35	Age: 36-45	Age: 46-55	Age: 55+
Ln(WTP)	-1.768***	-1.649***	-1.802***	-1.945***	-2.257***	-1.520***	-1.390***
	[0.066]	[0.083]	[0.129]	[0.183]	[0.191]	[0.098]	[0.149]
Constant	6.648***	1.357***	1.598***	1.839***	2.217***	1.082***	0.976***
	[0.087]	[0.107]	[0.171]	[0.252]	[0.259]	[0.122]	[0.187]
Observations	181	25	32	30	33	24	33
R-squared	0.798	0.945	0.867	0.802	0.819	0.916	0.737

Source: Calculations based on own survey of WTP for craft beer in Slovenia.
Notes: Standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.

Figure 6: WTP for craft beer by survey respondents



Source: Own survey of WTP for craft beer in Slovenia.

the product demanded to the proportional change of the price of the product. In our case, we can take the number of respondents willing to buy craft beer at a certain price or above that price as “the quantity of the product demanded” (Q) and WTP as the corresponding price (see Le Gall-Ely, 2009, p. 93). To obtain an empirical estimate of WTP for craft beer based on our survey data, the following equation was estimated via a regression analysis (the ordinary least squares method):

$$\ln(Q) = c + \eta * \ln(WTP) \tag{2}$$

with c and η being the parameters to be estimated. Equation (2) is in a convenient log-log form, so the own-price elasticity for craft beer is obtained directly as the parameter η . This can easily be verified – taking derivatives of both sides of Equation (2) and rearranging, one obtains:

$$\eta = \frac{dQ/Q}{dWTP/WTP} \tag{3}$$

where the numerator of the ratio at the right-hand-side of Equation (3) is the proportional change in the number of respondents willing to buy craft beer, and the denominator is the proportional change in WTP. Thus, by definition, the ratio equals the own-price elasticity for craft beer.

The empirical results are as follows. Based on our survey data, the estimated own-price elasticity for craft beer – calculated over the whole sample of respondents – is -1.8 (Table 2, model 1; the table also presents estimates of elasticity for craft beer by age group, which are used to check the validity of Hypothesis 3 below). The estimate is statistically significant at 1 percent. Elasticity being greater than 1 in absolute terms means that the demand for craft beer is elastic. Therefore, based on our empirical analysis, we reject Hypothesis 2, i.e. that demand for craft beer is inelastic.

For comparison, according to Euromonitor (2014), the price elasticity for beer (lager, stout, and dark beer) is -0.4 (that is, it is inelastic). In contrast, the price elasticity for dark beer is -1.5, that is, it is elastic and similar in magnitude to the one obtained in this study.¹³ As for the estimates of the elasticity of demand for beer in the US, Tremblay and Tremblay (2005) summarise the findings of seven studies, all of which find demand for beer to be inelastic, with the average estimate amounting to -0.498 (the estimates of individual studies range from -0.142 to -0.889).

To shed further light on the analysis of the own-price elasticity of demand for craft beer, we contrast constant elasticity estimates with arc elasticity estimates. The latter measure elasticity between two points on the demand curve, with percentage changes in the two variables of interest being calculated at the midpoint. The arc estimates of elasticity are calculated by the following formula:

$$\eta_i = \frac{(Q_{i+1}-Q_i)/((Q_{i+1}+Q_i)/2)}{(WTP_{i+1}-WTP_i)/((WTP_{i+1}+WTP_i)/2)}, i = 2, 2.5, \dots, 5.5 \tag{4}$$

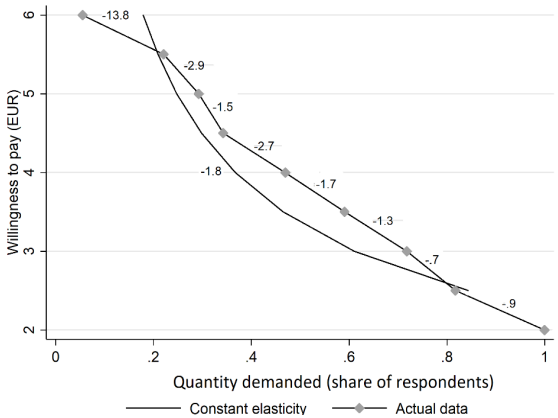
The interval estimates are obtained for 50-cent intervals, spanning the range from €2.00 to €6.00.

¹³ Euromonitor International (2014) presents long-run price elasticities (responses in quantities demanded to price changes measured over a five-year period), averaged across 880 countries.

Our arc estimates of elasticity range from -0.9 to -13.8, while nearly monotonically decreasing from higher to lower values of WTP (Figure 7). We can thus conclude that except for the very high and very low levels of WTP, the interval estimates match the constant elasticity estimate of -1.8 pretty well. From the figure we can also observe that the estimated -1.8 price elasticity corresponds to a price of craft beer of about €5.00.

Moreover, from the calculated arc elasticities it can also be concluded that the price of craft beer at which demand for such equals -1 is about €4.00. This is also the optimum price in terms of revenue maximisation, because increasing the price beyond €4.00 – into the range where estimated arc elasticities are larger than 1 in absolute value – would disproportionately reduce the quantity demanded and thus lower total revenue.

Figure 7: Arc estimates of the elasticity of demand for craft beer



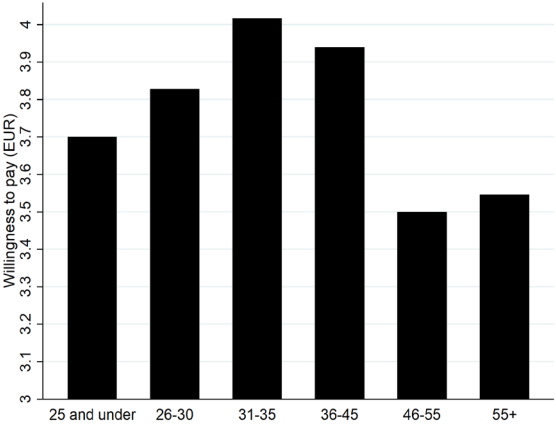
Source: Own survey of WTP for craft beer in Slovenia.
Note: The figure presents two curves: one that depicts the predicted (fitted) values of willingness to pay obtained based on the estimated equation (X) and thus representing constant elasticity in every point on the curve; the other presents actual WTP with associated arc estimates of the elasticity of demand for selected intervals.

Testing Hypothesis 3: “A price premium for craft beer over traditional beer is negatively affected by a person’s age and positively by his or her income.”
Testing was performed both via direct comparisons of the price premium and WTP for various age and income groups, as well as via estimating regressions with the logarithm of WTP as a dependent variable and age and the logarithm of the individual’s hourly wage as explanatory variables.

A comparison of WTP by age group shows that for the three youngest groups – 25 and under, 26–30 and 31–35 – WTP increases with age, reaching a maximum of €4.00 for the 31–35 category (Figure 8). For the oldest three groups, WTP is smaller, particularly for the 46–55 and 55 and above categories; for the latter two categories, WTP is smaller than for any other age category. From

the graph we can thus conclude that the relationship between age and WTP has an inverted U-shape, that is, WTP increases with age initially, reaches a peak at 31–35, and decreases at higher ages.

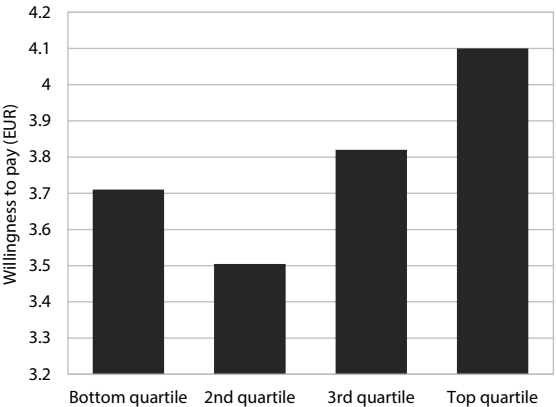
Figure 8: WTP for craft beer by age



Source: Own survey of WTP for craft beer in Slovenia.

In contrast, the comparison of WTP by income group suggests a rising WTP pattern by income, or perhaps a U-shaped pattern.¹⁴ The average WTP of the third and even more of the fourth quartile exceeds the average WTP of the bottom quartile (Figure 9). The exception breaking the steadily increasing pattern of WTP by age categories is the second quartile, for which WTP is the lowest.

Figure 9: WTP for craft beer by income quartile



Source: Own survey of WTP for craft beer in Slovenia.

A regression analysis sheds further, more definite light on the examined relationships. Table 3 presents the results of the estimated regression, with $\ln(\text{WTP})$ as a

¹⁴ Income is approximated by the predicted hourly wage. The latter is imputed using the estimates of the earnings function for the entire Slovenian population in 2015 as reported in Laporšek et al. (2019), which includes education, gender, age and age squared among the explanatory variables.

Table 3: Estimating income elasticity for craft beer and the impact of a person’s age and perceived beer attributes on WTP

	(1)	(2)	(3)
Age	-0.005**	-0.006**	-0.004*
	[0.002]	[0.002]	[0.003]
Ln(predicted hourly wage)	0.252*	0.238*	0.250*
	[0.128]	[0.133]	[0.135]
Beer attributes related to known beers			
Taste		-0.007	
		[0.045]	
Price		-0.064**	
		[0.032]	
Geographic origin		-0.008	
		[0.026]	
Aroma		0.019	
		[0.037]	
Drinkability		-0.023	
		[0.041]	
Level of alcohol content		0.056*	
		[0.029]	
Brand		-0.020	
		[0.029]	
Beer attributes related to unknown beers			
Design of the label			0.014
			[0.027]
Beer style (IPA, ale, stout)			0.014
			[0.030]
Origin of the brewery			-0.016
			[0.029]
Price			0.009
			[0.035]
Beer promotion/happy hour			-0.012
			[0.027]
Manufacturer’s reputation			-0.019
			[0.029]
Constant	0.905***	1.171***	0.890***
	[0.254]	[0.379]	[0.321]
Observations	177	177	177
R-squared	0.033	0.075	0.028

Source: Calculations based on own survey of WTP for craft beer in Slovenia.
Notes: Standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.

dependent variable and age, ln(predicted hourly wage), and various perceived beer attributes as explanatory variables. First, regarding age, the estimated coefficient – ranging from -0.004 to -0.006, i.e. one year of additional age being associated with a 0.4–0.6 percent reduction in WTP – is negative and statistically significant in all estimated models. Moreover, we find that the estimates of own-price elasticity for craft beer by age group

are also the lowest for the oldest two age categories (46-55 and 55 and over, see Table 3, models (2) – (7)). This is perhaps a surprising finding, given that WTP is the lowest for these two age categories. Second, regarding personal income, the coefficient of ln(predicted hourly wage) – which the equals income elasticity of WTP – is positive and significant in all three estimated models, ranging from 0.24 to 0.25. Therefore, based on a

regression analysis, we can confirm Hypothesis 3 that a price premium (WTP) for craft over traditional beer is negatively affected by a person's age and positively by his or her income.¹⁵

Testing Hypothesis 4: "The price premium for craft beer over traditional beer is related to the importance placed on the perceived beer attributes."

This hypothesis is tested via a regression analysis, using the same model as for Hypothesis 3. The estimated model thus has $\ln(\text{WTP})$ as a dependent variable and the following explanatory variables: age, $\ln(\text{predicted hourly wage})$, and two sets of perceived beer attributes: those related to the consumption of beer that respondents are familiar with, and those related to choosing among unknown beers. Note that the valuation of beer attributes was obtained based on the survey questions about the importance (on a scale of 1 to 5) placed on various beer attributes.

The results show that only two perceived beer attributes affect WTP, or equivalently, the price premium for craft over traditional beer. Two attributes among those related to known beers are statistically significant: price and level of alcohol content, with the first lowering and the second increasing WTP (Table 3, model 2). Interestingly, other attributes – taste, geographic origin, aroma, drinkability and brand – are shown to have statistically insignificant effects. Among beer attributes related to unknown beers, no attributes proved statistically significant (Table 3, model 3). Note that the estimated models control for the respondent's age and predicted hourly wage. We can therefore partially confirm Hypothesis 4, as two of the studied perceived beer attributes – price and level of alcohol content – are shown to statistically significantly affect the price premium for craft beer over traditional beer.

5 Conclusion

The paper analysed factors that determine WTP for craft beer consumed in bars and restaurants among Slovenian consumers. The information about WTP was obtained via an online survey, with the key questions eliciting information about WTP being based on contingent valuation and double-bounded dichotomous choice. Information was also collected regarding the desired beer attributes, as well as about selected respondents' personal characteristics.

The key findings are as follows:

- (a) On average, respondents were willing to pay €1.35 more for a serving of craft beer as compared to a

serving of the lager of their choice (for which the hypothesised price was set at €2.40). The price premium that consumers were willing to pay for a craft beer was statistically significant (thus Hypothesis 1, i.e. that consumers are, on average, willing to pay a price premium for craft beer over traditional beer, is confirmed).

- (b) My analysis shows that demand for craft beer is elastic. Based on the survey data I collected, the own-price elasticity for craft beer was estimated to be -1.8 (therefore, Hypothesis 2, i.e. that demand for craft beer is inelastic, is rejected).
- (c) Analysis of the survey data also shows that a price premium for craft beer over traditional beer is negatively affected by a person's age and positively by his or her income (Hypothesis 3 is thus validated).
- (d) The results show that two perceived beer attributes affect WTP in a statistically significant manner: price and level of alcohol content, with the first attribute lowering and the second increasing WTP. These findings partially validate Hypothesis 4, i.e. that the price premium for craft beer over traditional beer is related to the importance placed on the perceived beer attributes.

In light of the discussion of drivers of the shift in preference to craft beer in Section 2, the finding that consumers are willing to pay a price premium for craft beer over lager should really not come as a surprise. Indeed, all of the discussed drivers – the pushback to capitalism and globalisation, pursuit of the "authenticity" of products, preference to locally sourced ingredients – are very much also present in Slovenia. The finding that in Slovenia the price premium for craft beer over traditional beer is negatively affected by a person's age and positively by his or her income also conforms to expectations. It is also in line with the result obtained by Gabrielyan et. al (2014) that in the United States consumers with relatively high incomes are willing to pay more for a beer, and that age has a negative impact on WTP. On the other hand, the finding that the demand for craft beer in Slovenia is elastic is somewhat unexpected, but it may be related to the fact that the emergence of craft beer in Slovenia is relatively recent and that it takes time for consumers to change preferences – to "develop a taste" for craft beer.¹⁶ And also the finding that a high level of alcohol content is highly valued by Slovenian drinkers falls into the category of surprises.

What implications for the marketing strategies of microbreweries can be derived from the above findings?

¹⁵ To test for nonlinearity, the squared terms of both age and $\ln(\text{predicted hourly wage})$ were added to the estimated models. In all specifications, the coefficients of both terms proved to be insignificant and thus nonlinearity could not be proved.

¹⁶ That demand for craft beer is more elastic than demand for mass-produced beer is confirmed by Toro-González et al. (2014). They find that demand for beer in United States is inelastic, but that the demand for craft beer is notably more price responsive compared to mass-produced beer, with respective own-price elasticities of -0.126 and -0.212. Note that this study uses retail sales data of various types of beer, and thus the revealed preferences approach to measuring WTP.

The finding that demand for craft beer is elastic suggests that by lowering prices, the overall revenues from on-trade beer consumption would likely increase and, depending on the microbreweries cost function, also profits might increase. This outcome may occur because, as our survey data suggest, the loss of revenue due to lowering the price would be more than compensated by increased sales as additional consumers enticed to drink craft beer at the lower price would enter the market. Indeed, our calculations show that the optimal price in terms of revenue maximisation is approximately €4.00 (at that price, the elasticity of demand for craft beer equals -1), and so either lowering or increasing the price would result in a loss of revenue (whether that price is also profit-maximising depends on the producers' cost functions, and thus determining the profit-maximising price is beyond the scope of this paper).

Given the low market share of craft beer in Slovenia, producers may also consider the temporary use of penetration pricing to increase the craft beer market share. Another, quite intriguing, implication relates to the finding that a higher level of alcohol increase WTP for craft beer. This implies that, again depending on producers' cost implications, increasing the alcohol level would positively affect the producers' profits. Given the non-representativeness of the sample from which the above findings are obtained, however, these implications should be taken with great caution.¹⁷

Because the above results may not be representative of the overall population – given the convenience snowball method of the survey that I relied upon – it would be instructive, as part of follow-up research, to draw a more representative sample and compare the new results with those obtained above. Moreover, with Slovenia being a laggard in the craft beer market, it would be interesting to repeat the study of WTP for craft beer after, say, 5 years, to see if WTP for craft beer changes.

¹⁷ In their study of WTP for sensory attributes in beer, Gabrielyan et al. (2014) also express concern about sample representativeness as 51 percent of their respondents held an advanced academic degree, and they acknowledge limitations regarding the extent to which their findings can be generalised to broader populations.

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