

Review

Consumer Studies: Beyond Acceptability—A Case Study with Beer

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Abstract: Beer is one of the most consumed alcoholic beverages in the world; its consumption and preference are evolving from traditional industrial beers of low complexity to novel craft beers with diverse flavour profiles. In such a competitive industry and considering the complexity of consumer behaviour, improvement and innovation become necessary. Consequently, consumer science, which is responsible for identifying the motivation behind customer preferences through their attitudes, perception and behaviour, has implemented strategies ranging from simple hedonic measurements to several innovative and emerging methodologies for a deeper understanding of the variables that affect the product experience: sensory, affective and cognitive. In this context, we offer a review inspired by previous research that explores some of the quantitative and qualitative methods used in consumer studies related to beer consumption, ranging from traditional approaches (acceptability, purchase intention, preference, etc.) to techniques that go beyond acceptability and allow a different understanding of aspects of consumer perception and behaviour (segmentation, expectations, emotions, representation, etc.). Also, innovative applications (contexts, immersive technologies and virtual reality, implicit measures, etc.) and current trends related to consumer science (Internet, social media, pairing, product experience, etc.) are addressed.



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1. Introduction

Beer is one of the most consumed beverages, representing 78% of alcoholic beverages worldwide [1]. Due to its popularity, growing demand and availability of new technologies and materials, the beer industry has become a highly competitive market where improvement and innovation have become necessary.

In recent decades, beer consumption preferences have also been evolving. The beer industry has sought to diversify to improve the consumer experience, offering a wide range of products that compete based on quality and diversity. Large breweries are leading this trend; however, small craft breweries are also growing steadily [2].

The development of craft beer has generated a growing interest among consumers. More than creating a beverage, it is the development of a brewing culture that creates innovative processes that allow the exploration of different flavours and original styles, incorporating and blending diverse ingredients such as barley, yeast and hops. When brewing craft beer, unconventional components such as malted and non-malted grains, fruits, herbs, spices, etc., are exploited to obtain special notes [3]. In short, beer is a complex beverage.

Because beer offers a wide range of sensory aspects, it is vital to ensure its quality and increase its acceptability; sensory analysis becomes an indispensable tool. Sensory science is a multidisciplinary field that uses humans to measure, analyse and interpret their reactions to product properties as perceived by the senses; it also works with the

social aspects of how a group of people uses their minds to interact with the environment, products, other people, etc. [4].

Regarding sensory evaluation, consumer studies seek to identify consumers' inclinations, motivations and buying behaviour based on their perception. Consumer science has also been changing dramatically. Years ago, consumers were studied solely regarding their acceptability, preference or purchase intention, which were considered critical factors in food choice [5]. However, this type of test lacks validity due to the failure of essential elements to predict consumer choice towards products in their daily life [6,7]. Today, when choosing a product or service, the consumer puts his needs about the offer available on the market, expecting not only a functional benefit but experiential or symbolic [8]. Consumer behaviour is complex; it is influenced by various interrelated factors linked to the product, the context and customer characteristics [7].

There are several possibilities to improve the benefits a product provides to the consumer and, therefore, a better prediction of its success or failure. Several novel and emerging methodologies applied to consumer science have been implemented. They have evolved from simple hedonic measurement to a deeper understanding of the variables that affect the product experience: sensory, affective (emotions and moods) and cognitive (perception, representation, memory) [9,10].

Among the studies that have been conducted are, to mention a few, the impact of intrinsic and extrinsic product factors [11], expectations [5,12,13], sensory perceptions [14], emotional associations [15–18] and attitudes and conceptualisation [19–22]. Likewise, interdisciplinary research and product experience has become fundamental [23–25]. This information is of interest to the food industry, both when targeting their advertising campaigns and searching for the market segment to which their product could be directed.

This article aims to integrate some of the quantitative and qualitative approaches recently used to evaluate consumer behaviour that explain differences between products in a more determinant way than acceptability, preference or hedonic evaluation, taking beer as a case study.

2. Traditional Quantitative Studies

The basis of quantitative consumer studies is the numerical analysis of the relationship between consumer response and products. These studies are widely used in industry and have been beneficial for developing new products. First of all, evaluating the acceptability of a product or service is vital for its development, exploring eating habits, health effects, innovation potential, etc. In the food industry, it is used in studies of product positioning in the market and shelf life and to evaluate the effect of changes in formulation and processing. In the same way, price is an essential factor in the purchasing decision. There are several methods to know the price consumers are willing to pay: (1) ask directly if they would pay a specific price for a product, (2) conduct product choice trials including price as a design variable and (3) conduct experimental auctions simulating the natural context; at the same time, to measure purchase intention, the consumer indicates the probability that they will buy the product using 5- or 7-point scales.

On the other hand, to measure preference, the paired comparison test is the most widely used; it consists of presenting the participant with two products simultaneously and using "forced choice"; the participant must choose one. A series of comparisons can be made if more than two products are evaluated. These tests are used in market studies to establish preference over the competition, assess the impact of a modification or choose between two developed prototypes. Finally, it is possible to determine a product's sensory attributes that drive consumer preference in consumer studies; this could be achieved through acceptability tests or with the help of JAR (Just About Right), which are bidirectional suitability scales whose midpoint is the ideal (or JAR). Extremes range from too little to too much, indicating consumers' opinions about the intensity of simple attributes concerning their ideal. These tests are helpful in product development and reformulation [26–35].

Acceptability, preference and purchase intention assessment are some of the traditional quantitative studies widely used in the food and beverage industry. These studies have proven helpful for new product development but are insufficient to understand the variables that affect the intricate food selection process. The biggest challenge of traditional quantitative methods is their ecological validity, as they overlook essential factors influencing the choice and purchasing decisions. Because of the need to gather as much information as possible for a better understanding of both consumer behaviour and their interaction with a product, the application of methods to evaluate aspects beyond acceptability has become one of the most significant challenges for consumer science.

2.1. Product Perception and Segmentation

The beer industry's growth has benefited from innovation, creativity and authenticity. In beers, style refers to combining hundreds of factors, such as ingredients, production method, origin, etc., which can influence the beer's overall character and the product's originality [29]. Understanding the quality indicators of a product and the relative weight that customers give to these indicators is crucial for the food industry; this information allows for the improvement of the perception of the quality of its products, which influences consumer decisions [36].

Perception is the process by which we become aware of an object through our senses. Perception studies of a product or a category of products aim to explain how consumers classify them according to their intrinsic (aspects of the development directly related to its physicochemical and sensory properties) and extrinsic attributes (that are related to the product but are not part of it) [12]. To understand product perception, it is necessary to find the quality cues linked to various interrelated factors connected to the product under study, the context of consumption and consumers' characteristics [36].

Beer is a product category that continues to expand; its consumption has changed significantly, from the traditional preference for bland-industrial beers to the rise of the craft beer movement with its complex flavours. Beer can be described in terms of various sensory characteristics. However, the desire for and choice of beer varies depending on consumer preferences. Different product properties can significantly impact consumer liking and preference, for example, intrinsic attributes such as flavour, bitterness, aroma, foam height, style, temperature, visual appearance, colour, turbidity, alcohol content, etc. [3,29,37–42]. On the other hand, extrinsic attributes or the information available to the consumer regarding the product can influence their expectations and consumption [12,43]. This information can refer to the product and the brand itself [44,45], the label design and information, the packaging and the type of container [46], as well as context (visual and auditory attributes) [24,47–51]. Other factors such as brand loyalty, familiarity, meaning and price have an essential impact on consumer choice [37,52].

Likewise, many consumption variables are associated with consumer preference, desire and choice of beer. Among these variables are demographic (e.g., age, gender, socioeconomic level, academic level, region/city, etc.) [19,53–56], genetic (e.g., taster status regarding 6-n-propylthiouracil -PROP- taste sensitivity, sweet-liker status and thermal taster status), which affect the way consumers process and perceive the taste of beer to the point that they determine and predict consumption habits [57–59], psychological (e.g., personality, emotions, activities, interests, etc.) and psychosocial (e.g., values, attitudes, etc.) [17,22,30,52,60], ethnocultural (e.g., ethnicity, race, social identity, etc.) and lifestyle (e.g., the way of consumption, culture consumption, etc.) [37,61].

In brief, intrinsic and extrinsic attributes can vary drastically from one beer to another, depending on hundreds of factors that impact the overall character. Still, consumer variables also involve psychological, sociocultural and biological mechanisms [37]. In this sense, it is crucial to analyse and interpret the variables associated with beer consumption linked to the product, the context and the characteristics of the target consumer. These are typically used to better segment, understand and predict consumer groups. This informa-

tion also allows manufacturers to improve the perception of the quality of their products, which influences consumer decisions.

Segmentation research serves as a central instrument to identify a pattern defined by a set of variables; it seeks to explain the results obtained from a consumer study and describes personal tastes. Analytically, *a priori* segmentation, based on consumer information to define segments, consists of grouping consumers with similar characteristics such as gender, age, attitudes, etc., and analysing the preferences of each group. In contrast, *a posteriori* segmentation uses the results to establish groups of consumers with diverse preference patterns. The second method is usually more successful in identifying groups with differences. Typically, the segments are identified by cluster analysis, which can be applied for data reduction; instead of considering all observations, the number of words can be reduced by representing clusters with mean values. However, cluster analysis is the most widely used statistical technique; several approaches identify segments, e.g., automatic cluster analysis such as hierarchical methods, K means and fuzzy C means [34,62].

To mention some examples, Gómez-Corona et al. [19] segmented a group of beer consumers, classifying them based on their demographic variables and consumption patterns into “craft”, “industrial” and “occasional” consumers. In another study based on multiple variables ranging from demographic to psychographic and behavioural, Calvo-Porral et al. [52] identified five main groups of consumers: “Beer lovers”, “Circumspect seniors”, “Social drinkers”, “Homelike women” and “Beer to fuddle”. Meanwhile, Jaeger et al. [63] explored the existence of segments driven by craft beer flavour preference, discriminating between consumers seeking more robust and complex flavours than traditional ones.

2.2. Expectation Studies

Consciously or unconsciously, we all have expectations all the time. These frequently appear in people’s day-to-day lives, affecting their reactions and decisions and can vary significantly from person to person [64]. Expectations are psychological anticipations that something will occur or be experienced [65]; they play an essential role in food consumption because they can influence a person’s judgment, improving or degrading their perception, acceptability and choice of a particular product [43,64,66].

Several studies have focused on understanding expectations’ role on consumers from their experiences, individual differences and product-related information, whether intrinsic or extrinsic factors [5,12,13,43,67]. By mediating the effect of these cues, the industry seeks to generate favourable sensory expectations and influence levels of acceptability and even shape and enhance the consumer experience, raising the probability of a product’s success in the market [5,12,66,68].

Before trying a product, consumers retrieve information from previous experiences stored in memory, using it to make judgments. Previously generated expectations could lead to purchase or rejection [69,70]. Tasting follows after the initial inspection of a product; at this point, intrinsic and extrinsic factors can change consumer expectations and liking; at this same point, expectations and actual sensory properties of foods and beverages are compared [64].

Based on behavioural data, four main psychological theories explain the effects of disconfirmation of a consumer’s product expectations: assimilation, contrast, generalised negativity and assimilation–contrast. According to the assimilation model, the person adjusts their perception toward their expectation. According to the contrast theory, consumers will magnify the difference between the expected and the actual product performance; consequently, their evaluation tends to move in the opposite direction of their initial expectation. In the generalised negativity theory, a less favourable rating will be given if the product is not as expected. Finally, the assimilation–contrast model explains expectations and their effect on taste and flavour perception. If the actual sensory properties match expectations, the consumer is satisfied, leading to repurchase [71]. In contrast, if properties differ from expectations, it can lead to dissatisfaction and rejection of the product [11,64].

This assimilation effect and the ease with which it can be achieved is essential for marketing and product development [72].

In practical terms, consumer acceptability tests are conducted based on hedonic scales. The tests are undertaken blind, i.e., without providing any product information, but also with information; in this case, there may or may not be product tasting: we speak of an expected or expectation evaluation when the product is not sensorily evaluated; on the contrary, when the product is tasted with its packaging, brand or concept, it is known as an informed acceptability test. Typically, data are collected under the three conditions mentioned [34].

Different strategies have been created in the beer industry to attract the consumer's interest. Although beer has been extensively studied, few studies have been conducted on product-related cues and how our expectations condition perception. Providing product information has become essential to create favourable expectations about its sensory characteristics. For example, giving additional information about the ingredients used in brewing [15], the influence it has on the design, the visual appearance, the sensory descriptors [11,12,40,41,72,73], the name [65], the brand [31,74], the packaging and the type of glass used [40], the brewing process [75], the physicochemical characteristics, such as the alcohol content [11,72], and the use of local and traditional ingredients from specific regions/countries for use in the brewing process [76].

2.3. Emotional Measurements

In addition to being a subject of measurement in psychiatry and psychology, the study of emotional response has become one of the variables of most significant interest in consumer studies by offering supplementary information to acceptability [18,77,78]. Emotions are a central quality of human existence, and most of our behaviour, motivation and thinking are enriched and influenced by emotions; accordingly, emotions have played a fundamental role in food selection and consumption by influencing the type and quantity of consumption and consumption the hedonic [79]. Several methodologies are currently used to quantify emotional responses, from questionnaires to implicit methods and applied consumer neuroscience techniques [80]. The following Section 3.2 discusses these methodologies in more detail. Regardless of the method, the objective is to determine whether a product evokes the emotions a given brand wants to convey, distinguish between products with the same hedonic valuation, or design a product to communicate a specific emotion. When the objective of the consumption activity is focused on transmitting emotions above a functional purpose, we speak of "experiential consumption" [79].

The most commonly used methodologies to assess emotional response are questionnaires where, through a CATA (Check All That Apply) test [81] or through categorical scales [81], participants indicate the emotions experienced after consumption of a product. The first lexicon developed to measure emotions related to product consumption was the EsSense Profile™ [82], perhaps the most prevalent emotion measurement tool in use today. Other methods have been developed for this purpose, such as consumer-defined positive and negative emotion lexicons [83] and lists of complete sentences, reducing ambiguity and improving consumer understanding [84]. Due to the culture clash in the conceptual frameworks defining emotions, these tests are limited in their ability to adapt emotional terminology to various languages and cultures.

Beer is a complex beverage regarding sensory properties, styles, quality, ingredients, brand, etc. Various factors generate very different responses in the consumer, both at the level of liking and emotional response, whose evaluation has been extensively analysed [17,44,59,65,77,85–91]. Different authors have used various lexicons, which have improved over time, allowing the analysis of emotions elicited by beer consumption [15,83,92,93].

For example, Silva et al. [90] evaluated Dutch and Portuguese consumers using a lexicon, interviews and different stimuli, such as tasting and presentation of images from different contexts related to beer consumption that had to be associated with pictures of faces expressing emotions, associating beer in general with positive emotions of high arousal, such as "adventurous" and "energetic", contrary to non-alcoholic beers which

evoked neutral and negative emotions, such as “rational”, “conscious” and “disappointed”, leaving as a perspective to bring non-alcoholic beer closer to reaching emotional responses similar to beer in general and at the same time, greater acceptability. Many other perception variables can be used to differentiate beers. These include perceived familiarity or novelty, situational appropriateness, attitudinal associations and their relationship to emotional response. For example, Cardello et al. [23] managed to differentiate a group of beers into (1) familiar, classifying them as “ordinary”, “boring” and “simple”, appropriate for “casual” and “everyday” situations and associating them with passive emotions, and (2) novel, which was “unusual”, “intriguing” and “complex”, appropriate for “special occasions”, associated with more active emotions.

Despite their popularity, word-based emotion evaluation questionnaires have received several criticisms about their validity, arguing that consumers may select emotional terms even when they do not feel them and that they rarely use words to spontaneously express their emotional responses to products [94–96]. To elicit more ecologically valid responses and to consider the increased use of electronic media, the use of “emojis”, as partial substitutes for written language, has emerged as an alternative to convey a wide range of meanings, from hedonic reactions to the product to emotional and conceptual associations [81,96–98].

Like words, emojis convey semantic information. Emojis are graphical representations of objects, facial expressions or body postures. Given their growing popularity on the Internet, social media and text-based communication, consumers today are highly familiar with using them to express emotions. Food consumption supports a more remarkable ability to differentiate similar products than words [81,99,100].

Knowledge of emotional responses has excellent potential in consumer studies. According to recent studies, assessing emotional reactions to foods provides valuable information that complements acceptability and improves consumer decision making. In recent years, emotional response assessment has been widely used in studies with beer consumers; however, refining measurement tools to ensure an adequate characterisation of the emotions experienced by consumers before, during and after consumption is still one of the main challenges.

3. New Techniques in Traditional Quantitative Studies

3.1. Multimedia Technology and Virtual Reality In-Context

The context of consumption includes the physical, social and situational conditions in which a product is consumed and significantly influences the emotional state, perception and the customer’s decision making [101]. Commonly, consumer studies are conducted in isolated booths, eliminating variables outside the product and removing it from its usual consumption context. However, the absence of an evaluation context may decrease consumer motivation and interest, affecting their ability to discriminate between samples and calling into question the ecological validity of the study by not reflecting how people consume products in their daily lives [47].

To increase ecological validity, various strategies have emerged to consider the usual consumption context in consumer studies. Some studies have been conducted in a real consumption context, for example, in a bar, one of the main places where beer is consumed [91,102,103], resulting in increased study validity. However, conducting consumer testing in real-world settings is costly, logically complex, and difficult to standardise across participants due to the lack of control over external cues [104]. As an alternative, multimedia technology and virtual reality (VR) make it possible to immerse participants in a specific context generated quickly and flexibly, with controlled characteristics.

The simplest way to recreate immersive consumer contexts is through video and sound projections, convincing consumers that they are part of the context and offering a multi-sensory experience with images, sound and even smells. Conversely, VR creates a computer simulation from a perceived image as the real world. VR systems include at least visual stimulation but can also be auditory, tactile and even olfactory. These experiences

enhance the engagement and motivation of participants, leading to a stronger and more positive emotional reaction [79].

Since these technologies can artificially create sensory experiences, their application allows a better understanding of the consumer experience. Several types of research demonstrate that digital representations of reality can appropriately alter food and beverage appreciation and state; as such, immersive technology can provide more reliable data for the consumer experience, adding ecological validity to tests [91,105–108].

An example of these applications concerning the beer context was reported by Sinesio et al. [102]; they compare immersive techniques applied in laboratory environments reproducing the act of “drinking beer in a pub”, comparing the immersive room with flat walls with 180° videos and with a pub set-up, VR headset with a 360° video and VR headset with a 3D model and 360° photos to a traditional environment, both in a laboratory and a real bar. The results show that emotions exhibiting a positive relationship with liking were higher in the in-context evaluations compared to the laboratory test. In general, a higher similarity of the results to the authentic pub was obtained in the immersive room and 3D VR case. However, in a study with similar results, Worch et al. [91] concluded that consumers’ emotional responses could be more related to the context and technology than to the beers themselves. On the other hand, Picket & Dando [108] demonstrated that altering the visual and auditory environment by seeking an “elegant” context influenced the willingness to pay, liking and feelings in an entirely virtual environment about the appropriateness of a product. Finally, Andersen et al. [105] exposed participants to beach environments using VR and more substantially affected desires related to cold beverage consumption.

In short, context is an essential factor. The decision-making process is entirely different when comparing purchase and consumption environments, where various settings produce different results. Multimedia technology and virtual reality are promising tools for assessing contextual influences, allowing the rapid and flexible generation of controlled contexts, resulting in greater ecological validity than laboratory tests; however, they are still in their early stages and face numerous technical challenges to overcome.

3.2. Application of Implicit Measurements

The most commonly used methods to study consumer perception may rely on bias-sensitive measurement, which impacts the validity and reliability of the results [109]. Implicit measurements are potentially valuable tools for identifying “true” responses of consumers, employing techniques to counteract non-conscious and often automated influences on consumer judgment, behaviour and motivation [110].

There is a diversity of implicit measurements that can be categorised into (1) measures that reflect central nervous system activity, such as electroencephalography (EEG) and functional magnetic resonance imaging (fMRI), (2) measures of autonomic nervous system activity, such as skin conductance and heart rate (but eye tracking and pupillometry are also interesting methods for measuring memory and expectation-based emotions), (3) expressive measures, such as facial expressions, and (4) implicit associations, which are tests developed to identify unconscious associations that are not accessible through introspection. They are based on interference in reaction to a task, which creates an automatic stimulation, facilitating or inhibiting the participants’ capacity to answer quickly and correctly. For example, the speed at which a stimulus is perceived follows us in obtaining basic information on the brain processes that define consumer behaviour [80,110].

Some of these measures are gaining popularity in consumer science, as in the brewing industry [111–115]. For example, eye movement detection, which tracks and records the gaze path of participants, provides valuable information on visual attention processes and information acquisition, allowing us to understand the relationship between visual attention, preferences and choices [109]. This technique has been used to study the impact of packaging design and information contained on labels on consumer perception [112,113]. Moreover, Wakihira et al. [115] investigated consumers’ facial expressions while tasting

beer samples. The results indicated the possibility of predicting the choice of beers through facial expressions. On the other hand, Hinojosa-Aguayo et al. [111] used EEG and evaluated hedonic and quality properties in beers, measuring neuronal activity through the measurement of changes in brain electrical activity, activating brain areas related to functional processes such as attention, memory or decision making. Finally, Smeets & de Graaf [114] used fMRI to identify brain areas that are activated to process information linked to a specific stimulus through changes in oxygen consumption and investigated whether consumption of alcoholic and non-alcoholic beer elicits similar brain responses.

There are multiple software packages to analyse fMRI data e.g., SPM (version 12, UCL, Queen Square Institute of Neurology, London, UK), FSL (version v6.0, Analysis Group, FMRIB, Oxford, UK), AFNI (version 22.3.07, Medical College of Wisconsin, Milwaukee, WI, USA) and BrainVoyager (version 22.4, Maastricht, The Netherlands); same for EEG data e.g., EEGLAB toolbox (version 2020.0, Swartz Center for Computational Neuroscience, CA, USA), BrainVision Analyzer (2.2.0, Utretch University, Utrecht, The Netherlands) and FieldTrip toolbox (version 20221126, Radboud University, Nijmegen, The Netherlands). These software packages contain several similar steps to analyse data: preprocessing, first-level analysis (i.e., analysis on a single subject level) and second-level analysis (i.e., analysis on a group level). The EEG data analysis pipeline might differ depending on the research questions and paradigms used [116].

Implicit measurements are another innovative tool to study consumer perception that complements traditional approaches. Recently, some studies on beer consumption have used them to obtain basic information on the brain processes that influence consumer behaviour. Their application could be considered, as they add value to expand understanding of how a product may satisfy consumers' specific sensory and emotional needs. Their principal importance lies in the validity and reliability of the results, avoiding possible response biases on the perception measurements. However, some of these techniques, such as the case of physiological measurements (EEG and fMRI) require expensive equipment and are highly invasive to consumers, leading to a lack of ecological validity. On the other hand, other alternatives can be applied simply using a computer.

4. Traditional Qualitative Studies

The concept of data is the main distinction between qualitative and quantitative studies. Qualitative studies collect information from various stories and experiences to understand the link between consumer and product. The study of how ideas, events or objects are represented in language and how they make sense to people, as well as the elements that influence thoughts, feelings and behaviour of people, have been investigated with qualitative approaches in various fields of psychology. Cognitive psychology is concerned with understanding how an individual acquires information from their environment and how they represent and convert it into knowledge that can guide behaviour. Perception, sensation, memory, problem solving, reasoning, decision making, language comprehension and production, etc., are topics of interest in cognitive psychology.

On the other hand, social psychology examines group attitudes, persuasion, social influence, stereotypes, rumours and identity concerning behaviours, mental states and processes based on social context [117]. Finally, phenomenology describes and interprets people's perspectives and perceptions to examine how they experience the world around them. The phenomenological approach focuses on product experience studies [24,118] and sensory ethnographies, using semi-structured interviews to understand perception in terms of the meaning that some phenomenon, event or object has for those people [19]. The challenge for the researcher is to visualise the qualitative world as a set of tools and methods that seek to uncover the meaning and sometimes explain the motivations behind a number.

4.1. Ethnographies, In-Depth Interviews and Focus Groups

Consumer habits reflect the wisdom of past experiences and are often stable over time; it is crucial to understand the underlying demographic characteristics of consumers

and attitudes toward consumption. Qualitative methods make it possible to study human habits and attitudes. Traditionally, ethnographies, interviews and focus groups (FG) are used to create and represent knowledge about society, culture or individuals [109].

Ethnographies, usually conducted in the consumer's house, provide a cultural understanding of the consumer by recording in written and audio-visual form their day-to-day activities, capturing the meanings that people associate with a specific phenomenon, such as the relationship they have with a product, e.g., with beer; the ethnographer carefully reads the transcripts, annotating them with codes [19,35,55,61,119]. Likewise, sensory ethnographies also record the sensory characteristics of the place (smells, colours, sounds, etc.). Metaphorically, this approach amounts to manually extracting and interpreting the main factors underlying the observed phenomenon. An inductive, iterative process is typically used for data analysis in which the ethnographer stealthily explores, interprets and conceptualises the data. According to Valentin et al. [120], as this process unfolds, patterns emerge in the code that gives rise to themes (i.e., recurring patterns of ideas, thoughts and feelings). The next step is to group some themes under much broader ones called meta-themes and label them. In the last step, contextual details and theoretical interpretations are added.

Currently, habits are measured using the frequency of consumption and previous purchases to determine the most used brands and to obtain a typology of consumers that can be expressed in demographic terms. However, this type of study does not explain the reasons for consumption, their motivations and the benefits of consuming one product over another. One solution is to use mixed qualitative and quantitative methods. For example, Gómez-Corona et al. [19] conducted a quantitative study on consumption habits towards craft and industrial beer in Mexico, followed by ethnographies to delve into attitudes and reasons that motivate consumption. This way, consumers were divided into the craft, industrial and occasional, according to their consumption habits. The craft consumer was defined by a higher proportion of men between 25 and 35 years of age, with a high level of income, who consume beer at home and buy beers in specialised stores, while the industrial consumer was defined by young people between 18 and 24 years of age who regularly drink beer in bars. The results showed that craft beer emerges as an experiential and symbolic product; craft beer consumers build an identity perceived as more authentic and unique than industrial beer consumers, who base their consumption mainly on functional attributes.

Furthermore, interviews and focus groups are the most common and powerful tools for understanding human behaviour. Semi-structured questions in in-depth interviews are the most used by qualitative researchers as they give rise to evocations of emotions, experiences and stories around a phenomenon. Also, when some interaction among participants is required, a focus group discussion is used. A meeting takes place, with the help of a moderator, among individuals who share the same characteristics and talk about specific topics. The sessions are recorded and subsequently analysed. Their primary objective is to explore the motivations for consumption of a product category, to select products that are well/badly evaluated, to study the perception towards a series of new product concepts, etc. The information must be coded to conduct the inductive analysis of the focus groups and classified by reviewing the transcription of the discussion, using the questions as initial categories. The original data is then analysed together with the transformed conceptual information. In-depth interviews and focus groups have been used to study the beer category [19,21,22,32,56,121–124]. An example of the contextualised focus group was carried out by Gómez-Corona et al. [118]; they studied the variables involved in the experience of drinking craft and industrial beer, obtaining valuable information to examine in depth the experiential differences between products and consumers.

4.2. Mental and Social Representation

It has long been known that our representations and beliefs influence our daily decisions, especially in consumption. Before interacting with a product, for example, by looking at the label, the brand, reading the nutritional information, inspecting the colour, or even

smelling it, we have certain beliefs; after having consumed it on various occasions, a mental representation is formed, created from its sensory characteristics, consumer attitudes and culture, as well as contextual information, among other factors. A product is mentally represented based on the consumer's general knowledge and memorable events. Therefore, to better understand consumer behaviour towards a given product, it is crucial to know how it is represented [43].

Mental representation is a set of functionally articulated elements that can be concepts, phrases or sentences, ideas, images, opinions, attitudes and values. This representation system has three dimensions: the knowledge that people have towards an object, product, person, etc., the general attitude that marks the positive or negative connotation and the representation field or structure that organises and classifies the representation elements. Understanding the meanings of objects by consumers means accessing the content and structure of representations [125].

Although perception and representation are sometimes used interchangeably, they are very different. Perception is how we perceive an object, whereas representation is how we structure it. In consumer studies, individual or social representation is possible [20,126,127].

The word-free association task is one of the most commonly used methods to assess consumer concepts, beliefs or attitudes [43,126,128]. In a free association task, participants indicate the first, some or all words that come to mind after receiving a stimulus word. The strength of each word is measured by its frequency of evocation. Based on an associative network conceptualisation of memory structure, the free association task indicates the relative strength of automatic associations between concepts, revealing commonalities within a group of individuals. In food choice, this technique provides information on cultural differences in memory structures that give rise to expectations.

There are other approaches to studying the representation of a concept. For example, associative elicitation techniques [126] and best-worst scaling [129,130] allow the construction of "concept maps" or "semantic networks"; categorisation (sorting task) [20,131,132] or free association tasks combined with categorisation and attitude measurement are used to access "social representations". The concept of social representation has just started to be used in recent consumer studies; it refers to a form of socially shared knowledge that contributes to the construction of reality common to a social group [133]. In a broader sense, we could define social representation as a type of social thinking.

Work based on mental and social representations has had applicability in understanding food-related phenomena, as in the case of beer [20,133]. Although industrial beers account for most consumers worldwide, craft beer is gaining popularity and market share, causing a significant shift in consumer perception and preference. Consequently, it is critical to understand and pinpoint how the product's relative meaning is created and consumers' overall representation. Culture is essential, influencing representational processes by guiding tastes and preferences. As beer representation changes among consumers, so are their consumption habits, which are being perceived in the market.

Based on a word-free association test, Gómez-Corona et al. [125] studied the impact of culture and consumption habits on the social representation of beer. The results showed that this representation is constructed differently across cultures. In France, the product description is the central axis of the representation, while in Mexico, it is led by the consumption experience and hedonic aspects. In the case of France, the representation of industrial and craft beer consumers is more similar, while in Mexico, they do not share the exact same social representation. This point could be crucial for breweries since the representation of industrial beer in Mexico and France could be the same (in terms of representation or symbolisation of the product), but not for the craft market.

Category studies are a set of techniques that provide a graphical representation of the position that products occupy in the mind of the consumer, showing the market structure according to their perception and preference; they evaluate the competition in a target market, identifying the sensory space covered by existing products representing the greatest possible diversity of sensory characteristics and the market gaps in the category.

This information allows for assessing the opportunity for high acceptability when launching new products or reformulating existing ones [34]. In a categorisation study (sorting task) conducted by Gómez-Corona et al. [20], the mental representation of beer was perceived differently according to gender and type of consumer (industrial or craft beer). Participants generally agreed more in their categorisation of industrial beers than craft beers. Men categorised beers based on prior knowledge, while women found their categorisation more on the affective dimension.

5. New Techniques in Traditional Qualitative Studies

5.1. Internet and Social Media

In recent decades, the Internet has spread worldwide, revolutionising and changing many aspects of our daily lives. Now, more than a means of communication, it is a necessity, as it allows quick access to information, buying and selling products and services, etc. The accelerated growth in Internet access makes it possible for people to carry out studies in a simple, fast and affordable way; this makes it possible to access large samples of consumers more efficiently than traditional methods.

Several traditional qualitative methods have been modified as a result of technological progress and the development of digital tools. For example, ethnographies have been adapting to the new social and cultural life circumstances, basing their field on digital platforms; some adaptations are mobile ethnographies, online ethnographies or netnographies, with digital tools or live streaming [117]. Today, the growth of the Internet allows researchers to conduct spontaneous and undirected evaluations in natural consumer environments to examine customer perception through their opinion. Online questionnaires are the simplest way to study concepts, attitudes or habits, collecting data in real-time [26,40]. Likewise, online evaluations provide valuable information for developing and improving new products and services. In this way, several online shopping sites ask the customer for an evaluation and description of their experience, which allows them to gauge the overall perception and identify representative qualities and the relative importance of the product and influence another decision making of customers.

Currently, social media and micro-blogs are some of the most popular platforms for interaction between communities of individuals with common interests, becoming an essential source of information and communication, as well as a valuable tool for research on consumers, since they allow obtaining a large amount of data from almost any consumer situation [96,134,135]. Crowdsourcing is implemented by several companies, including consumers, to generate and evaluate new ideas while developing products and services [136].

In most cases, the data to be analysed are text, but they can also be images and videos. When only a small amount of data is available, it is safest to analyse it manually. However, when large amounts of data are to be interpreted, there is a need for software, such as AtlasTi (version 22 by Thomas Muhr at Technical University, Berlin) and NVivo (version Release 1.0, QSR International) to analyse results automatically. Text-mining algorithms have become famous for analysing textual social media data, and an increasing number of text classifiers and sophisticated programs based on machine learning are being used [137].

Although social media have been little used in consumer science, they are recently becoming a valuable tool as a source of information. For example, Vidal et al. [96] analysed emotions in digital conversations on Twitter, and they concluded that users express more emotions with emojis than with words. Also, Vidal et al. [138] explored tweets related to breakfast, lunch, snacks and dinner on Twitter. At the same time, Saldaña-Villa [139] did so with tweets containing the word “bacon”, analysing them with textual statistics. Recently, Pérez-Rodríguez et al. [140] processed and analysed Twitter data to obtain information on the relevance and perceptions of the wine industry, the most important types and characteristics of a region and consumers’ opinions regarding their experience. On the other hand, Holmberg et al. [141] explored images on Instagram to examine the food context and type of food adolescents communicate.

Food and beverage pairing has received significant attention in disciplines such as gastronomy and sensory and consumer science. Pairing is the combination of two foods or a food with a beverage that, when they are consumed together present different sensory properties than when swallowed alone. Generally, it is sought that they complement each other and that one enhances the flavour of the other [142].

Food is not consumed alone, and pairing it with alcoholic beverages, such as beer and wine, enhances the drinking experience [139]. Traditionally, pairing research has focused mainly on studies with wine [143], but although there is little information, the study of beer pairing is not lagging [3,142–147]. Recently, social media have served as an innovative and effective approach for exploring beer pairing, revealing preferences from the perspective of consumers from different countries through photos, videos or posts of people sharing what they have consumed [148,149]. For example, Arellano-Covarrubias et al. [148], by analysing data extracted from images on Instagram and texts on Twitter, determined that chili, salt and lemon are the foods most frequently paired by Mexican consumers on both platforms with beer. They also found that images offered more information about beer-food pairings than texts. Their results agree with a previous study [149] showing that Mexican consumers mentioned drinking beer with lime and chili more frequently than consumers of other Latin American countries.

The development of the Internet is giving researchers access to data collection opportunities never before seen, simplifying and revolutionising the study of consumer perception. The brewing industry is taking advantage of the benefits of technology. However, it presents particular difficulties in obtaining representative samples, such as the heterogeneity of the population in terms of Internet access, the lack of control in the attention to the questionnaire by the participants and the considerable percentage of incomplete responses [79].

Craft beers have managed to foster a new beer culture in Mexico. Brewers have shaped consumers' perception that it is a product that can be paired just like wine, which has created a whole new drinking experience. In consumer science, food and beverage pairing is receiving significant attention. Although there is little information on beer pairing, social media is an innovative and practical approach to its research. Despite the advantages technology and the Internet bring to consumer science, there are some drawbacks. For example, data analysis requires processing a vast amount of information. In addition, due to many users' privacy concerns, accessing specific consumer information, such as age and gender, is sometimes impossible.

5.2. Product Experience

The search of consumers for new experiences is increasing considerably, so the preference and diversity of products have been evolving, competing according to their quality and awakening a more complex consumer in their interaction with a product. Consumption has gone from being functional to experiential. Combining multiple measures of product responses that provide greater insight into food decision making has become paramount; this multiple-response approach includes descriptive, affective and attitudinal aspects and situational appropriateness. At the same time, profiling products has been growing regarding their emotional, functional and abstract conceptualisations [23,25,89,150,151].

Beyond simply offering good quality products, producers are focusing on designing unique experiences. In recent years, the concept of "product experience" has emerged as a crucial component in research to understand the relationship between human behaviour towards a product or service, seeking to clarify whether the learning that takes place in the interaction with a product can produce lasting experiences, causing loyalty towards it. An experience can also be a competitive advantage as more and more companies focus on creating experiences to differentiate themselves in the market, as in the case of research related to beer consumption [24,38,39,77,118,150,152–156].

Schifferstein and Cleiren [157] define product experience as the complete set of effects a product has on a consumer. Experience requires an understanding of the various mental processes, including the cognitive system, which involves all operations

related to information processing, such as the affective system, which refers to the emotional interpretation of perception, including moods, feelings and emotions; and the sensory system, which includes all types of stimulation of our senses [158]. Studying these components (affect, senses and cognition) gives rise to “product experience”. Then, experience is not an attribute of the product but the result of the human–product interaction, in which the systems of the individual are involved and are affected by intrinsic and extrinsic product characteristics [78,159].

Starting from the idea that a food or beverage is not a possession, as is an object or service, but is something that we incorporate into our body to turn it into an experience, Gómez-Corona [4] makes a comparison between the concepts of “product experience” and “drinking experience”. In general terms, “drinking experience” is an appropriate concept to describe the experience when consuming a beverage. Although relatively new, this term has recently been used in research to refer to the measurement of responses associated with drinking beverages such as tea [160], milk [150], coffee [16,155,161], wine [153,154,159] and beer [23–25,118].

Taking beer as a reference, Gómez-Corona et al. [118] examined the factors influencing the experience of drinking craft versus industrial beer. The results confirm that cognitive, sensory and affective systems determine the consumption experience. The experience is also shaped by factors including attitudes, consumption patterns, the purchase process and product benefits, but these factors are more relevant during the pre- or post-consumption experience. Gender disparities in emotional experience were more prevalent, with women seeking more relaxation and men seeking excitement and stimulation. The latter placed greater emphasis on cognitive and shopping experiences when comparing industrial and artisanal consumers. Gómez-Corona et al. [24] designed another study using a CATA questionnaire listing the best-captured beer-drinking experiences. The study revealed that craft beer is mainly associated with a cognitive dimension, while industrial beer is more emotionally and sensory-oriented. Finally, Jaeger et al. [25] also endorse the importance of using emotional and cognitive measurements in addition to hedonic and perceptual variables as they allow for more detailed product differentiation, which can, in turn, be enhanced by market segmentation. Although sensory science focuses primarily on sensory aspects and the act of buying or consuming something, perceptions, attitudes and purchasing decisions are also influenced by other elements of their environment. This information can be applied to in-depth consumer research studies to examine the experiential differences between products and consumers.

In a few words, there is a trend of exploring product experience using a combination of multiple measures of responses to a product to gather as much information as possible about food decision making. Although the consumption experience of material goods has been studied for decades in consumer psychology, research linked to experience in food and beverage consumption has been largely unexplored; however, it is emerging as a potential holistic tool that allows understanding the consumer by taking into account not only the sensory dimension but also the affective and cognitive dimensions, allowing products to be differentiated based on these salient dimensions.

The concept of “drinking experience” has recently emerged to describe the experience of consuming a beverage like beer. The whole experience of drinking beer has begun to be explored [4]; however, the beer-drinking experience has yet to be fully understood. Many variables may be associated with the interaction before and during consumption, and must be investigated and validated.

6. Conclusions

The increase in beer preference has been influenced by lifestyle changes and consumers’ search for a multi-sensory experience. The remarkable shift in consumption patterns is often a sign that the perception of the product is changing, making it essential to measure how we experience it. However, studying beer consumer behaviour is a complex process influenced by several factors related to the products, the context and the consumer’s characteristics.

It is vital to conduct further research involving approaches beyond hedonic perception to achieve results with greater ecological validity. Technological developments and the Internet offer new possibilities that facilitate data collection in quantity and quality.

Developing sensory and consumer science also depends on interdisciplinary research, combining acceptability measures with other methodologies to enhance knowledge of what consumers perceive. Product experience evaluation is a potential holistic tool that enables a complete understanding of consumer behaviour, becoming a competitive advantage as more and more companies focus on creating experiences to differentiate themselves in the marketplace. Beer is more than just a beverage; attitudes surround it, it can evoke positive or negative emotions, manipulate mood. It has a complex mental and social representation, making it a suitable product for measuring consumer experience.

The methodologies used to measure consumer perception still need to be improved. Further research is required to demonstrate their effectiveness and aid food development. This study provides important theoretical implications, contributes to the body of research on consumer behaviour and can serve as a basis for new products and applications in the food industry, specifically for the brewing industry.

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