# A CLUSTERED-BASED SEGMENTATION OF BEER CONSUMERS: FROM "BEER LOVERS" TO "BEER TO FUDDLE"

## ABSTRACT

*Purpose:* New trends are emerging in the brewery sector; but to date beer consumer segmentations are scarce. In this context, the present study addresses the following questions: "*Are beer consumers monolithic or are there different segments in the beer market?;* and: "*What are the main characteristics of the beer consumer segments?*". The purpose of this research is to examine the potential beer consumer segments and to profile them regarding their consumption behaviour.

*Methodology:* Data from a sample of 592 consumers was analysed through hierarchical cluster analysis; and the validity of the cluster solutions was then examined through a Manova analysis.

*Findings:* A five-cluster solution emerged, revealing different beer consumption patterns and preferences. These segments are identified as "*beer lovers*", "*circumspect seniors*", "*social drinkers*", "*homelike women*" and "*beer to fuddle consumers*".

**Value:** Our findings suggest that beer consumers cannot be seen as a homogenous consumer group; and managers and brewers could manage beer as five different products, instead of considering beer as a single item.

*Keywords: Consumer, Cluster analysis, Market segments, Beer, Brewery sector.*

## 1. INTRODUCTION

The consumption of alcohol has been the focus of numerous studies, like sensory analysis (Leliévre et al., 2008), psychology (Valentin et al., 2007), and marketing (Cho and Stack, 2005), highlighting the importance of alcoholic beverage consumption.

In addition, new trends are emerging in the brewery sector, such as the increase of beer consumption at home, the increase of the awareness of beer quality among consumers, a higher demand for new flavours and varieties, and the increasing demand for craft and specialty beers (Aquilani et al., 2015). Considering that drink choices tend to be stable over time and consumers do not change their beverage consumption habits rapidly (Riet et al. 2011), it seems interesting to examine whether there are beer consumer segments with different demands and preferences.

Despite segmentation could be extremely effective in differentiating among beer consumers, there is scarce research on the examination of potential beer consumer segments. Further, a segmentation analysis it is critical for brewers in order to identify

and understand the different consumer segments and their consumption patterns in order to tailor beer products. In this context, the present study develops a clustered-based segmentation of beer consumers to provide a comprehensive profile of the different beer consumer segments identified.

## 2. LITERATURE REVIEW

### 2.1. Beer consumers' segmentation

Psychographic variables have been often been used in market segmentation to gain insights into the consumers' behaviour, preferences and motivations. And in the brewery sector, some studies were conducted on consumer segmentation, offering different profiles of beer consumers.

Gomez-Corona et al. (2016) developed a research using consumer ethnographies to understand the benefits and motivations of beer consumption; suggesting that beer consumers could be classified as *"industrial", "occasional industrial"* and *"craft beer"* consumers. However, consumer-based variables could be used in order to differentiate consumer segments (Cardello et al., 2016), such as product loyalty, familiarity, product image, perceived quality, *"value for money"*, purchase intention or even willingness to pay a premium price. Similarly, prior research on the topic supports that factors affecting beer choice and consumption could be divided in three different categories: consumer-based attributes, product-based attributes, and factors related to the purchasing and consumption situation (Aquilani et al., 2015).

### 2.2. Variables influencing beer consumption

#### 2.2.1. Consumer-based attributes

Previous research has some psychographic variables as influencing beer consumption, such as cognitive and attitudinal variables; as well as product familiarity, previous knowledge, product involvement (Giacalone et al., 2013) or product image (Cardello et al., 2016). In the present study, other consumer-based variables are also examined.

### 2.2.1.1. Consumer involvement

Individuals are likely to vary in the importance they place for beer, having different levels of involvement with the product (Zaichkowsky, 1985), ranging from those consumers who are highly involved with beer, to those consumers with low involvement. Likewise, highly-involved consumers place more importance and show higher interest on the product, while willing to pay a premium price (Zaichkowsky, 1985), compared to those consumers who are poorly involved or indifferent with the product.

In the brewery sector, prior research reports the conventional or industrial beer as a low involvement product category for many consumers, since the industrial beer it is a very common product that could be considered as a commodity of the beverage category (Gómez-Corona et al., 2016). On the other hand, craft beer, specialty beer or premium beer could be considered as high-involvement product categories (Aquilani et al., 2015).

### 2.2.1.2. Product loyalty

Following Oliver (1999), product loyalty could be defined as a deeply held commitment to buy a preferred product consistently in the future, despite situational influences or marketing efforts. Similarly, Dick and Basu (1994) noted that product loyalty depends

on the psychological disposition of the individual -attitudes and preferences-, and on behavioural aspects, such as a repeat patronage.

### 2.2.1.3. Product image

Prior research reports that eating and drinking experiences are influenced by the associations that consumers assign when thinking about a specific food or beverage (Thomson et al., 2010). Consequently, the individual's response to a food or beverage does not only depend on the product itself, but also on the product associations or image. So, product associations or product image could be used for differentiating consumers (Cardello et al., 2016).

Regarding beer image, previous studies highlight that beer is perceived as a conventional beverage consumed mainly to socialize (Silva et al., 2016). Similarly, beer is perceived as a "*thirst quencher*" associated with informal and relaxing occasions; thus, being a symbol of demarcation between work and non-work hours, in both eating and non-eating social contexts (Pettigrew and Charters, 2006). Finally, and regarding the emotions elicited in beer consumption, prior research shows that "*feeling relaxed*" is the most common emotional association with beer consumption (Yang et al., 2012).

### 2.2.1.4. Product perceived quality

Perceived quality could be defined as the consumer's judgement about a product's overall excellence or superiority (Zeithaml, 1988). Likewise, the product perceived quality results from the comparison of consumer expectations, with the actual performance of the product (Snoj et al., 2004).

In the last decade a growing interest for beer has been noted, with an increasing awareness of *beer quality* among consumers (Mejlholm and Martens, 2006; Berkhout et al., 2014) and a higher demand for handicraft, off-trade beer and locally brewed beer. Consequently, *craft beer* is becoming increasingly popular as an alternative to mainstream mass-produced beer (Aquilani et al., 2015; Gomez-Corona et al., 2016). So, nowadays, consumer preferences appear to be connected to the search for product quality and craftsmanship (Aquilani et al., 2015), and some type of beers are perceived as high-quality products, such as craft beer (Gómez-Corona et al., 2016).

*2.2.1.5. Product familiarity*

Previous research reports that product familiarity or the lack of familiarity may serve as a differentiator for beer consumers (Cardello et al., 2016). Additionally, Giacalone et al. (2013) examined the role of product familiarity and found that this variable accounted for differences in beer preferences and consumption.

*2.2.1.6. Willingness to pay a premium price*

The economic crisis of the year 2008 has changed the market share for beer: the cheaper beers have increased their market share, premium beer has decreased its consumption and the super-premium beers have substantially increased their market share. In this segment of premium-beer, consumers are demanding higher quality craft beers and specialty beers (Aquilani et al., 2015). In addition, some consumers became more inclined to drink less, while spending the same amount for more expensive quality products (Berkhout et al., 2014); and thus, willing to pay a premium price. It should be remarked that in the beer sector, higher prices are associated with higher levels of

product quality; while lower prices are associated with lower quality, unpleasant taste (Bredhal, 1999), and more affordable mass-produced beers (Ascher, 2012).

### 2.2.1.7. Product "value for money"

Sirohi et al. (1998) defined "*value for money*" as the value that the individual gets for what he/she pays; and Lapierre (2000) reported that "*value for money*" was the trade-off between the benefits received for a product and its monetary costs. More precisely, the price is the key driver influencing the products' "*value for money*" (Snoj et al., 2004).

In the beer sector, lower prices are usually appreciated by consumers, who associate them with low product quality and unpleasant taste (Bredahl, 1999). Similarly, higher prices generally mean better quality or higher product status to the consumer; while lower prices were associated with more affordable mass-produced drinks (Ascher, 2012). Accordingly, the industrial or conventional beer could be considered as a commodity of the beverage sector, since it is a very common product, being also considered as a product that can be used to get drunk (Gómez-Corona et al., 2016). So, conventional or industrial beer has a good "*value for money*", being an affordable mass-produced beverage.

### 2.2.2. Product-based attributes

### 2.2.2.1. Sensory attributes

The sensory approach considers the way in which senses play a determining role in consumption and product preferences. Regarding beer, consumers are mainly influenced

by sensory attributes like taste, aroma, texture, colour or even temperature, and can be segmented according to them (Daems and Delvaux, 1997).

In prior research there are scarce contributions on the analysis of the influence of each one of beer sensory attributes on consumer behaviour and preferences (Aquilani et al., 2015). Taste is the only beer sensory attribute whose effect was examined, and research shows it is the main motivation for beer consumption (Chrysochou, 2014), influencing beer consumption choices (Choi and Stack, 2005).

More precisely, Thompson and Thompson (1996) noted that "*consumers expect to find flavours such as bitterness, texture such as sparkles or physiological quality such as being thirst-quenching; so, a beer could be rejected if these expectations are not confirmed*". In addition, taste is an important attribute for the successful growth in the beer market (Thompson and Thompson, 1996) and should be considered especially when product characteristics such as low-calorie and low-alcohol content are perceived by consumers to jeopardize taste (Chrysochou, 2014). Similarly, prior research supports a close relationship between beer flavour and beer perceived quality. More precisely, specialty beer is chosen for its selection of flavours, increasing the probability of perceiving beer as premium quality, compared to conventional mainstream beers (Aquilani et al., 2015).

*2.2.2.2. Nutritional components and amount of alcohol*

Beer comprises nutritional characteristics and benefits on consumers who moderately consume beer, since it contains proteins, minerals, antioxidants, ethanol, dietary fibre and prebiotic compounds (Sohrabvandi et al., 2012). Some beer consumers have

become more aware of the health benefits and nutritional components associated with beer. Similarly, the availability of the beer nutritional information increases consumers' perceptions of the healthfulness of beer (Wright et al., 2008), influencing consumption and purchase behaviour (Lee et al., 2006). More precisely, weight management and the fact that low-alcohol beverages are a healthier alternative to alcoholic beverages have often been reported as important motives for their consumption among health-conscious consumers (Hill and Casswell, 2004).

However, the free-alcohol beer is a relatively new beverage that is consumed far less than regular beer and with little appeal to consumers which could be related with its lack of taste (Chrysochou, 2014; Silva et al., 2016). Further, free-alcohol beer is perceived as a functional beverage to avoid alcohol, being a substitute when alcohol is not convenient (Silva et al., 2016).

*2.2.2.3. Product packaging and labelling*

The product packaging has an unconscious impact on product choice (Mueller et al., 2010). Considering that alcohol consumption is related to hedonic behaviours, such attribute may have a greater impact on consumer preferences and product choices. However, the product packaging is also influenced by other variables, such as the product appeal and product expectations (Sester et al., 2013).

Regarding the beer image, prior studies report that nicer packaging and labels can enhance the experience of drinking beer, and that packaging attributes -such as glass format- is more important than beer flavour for consumers (Silva et al., 2016; Gómez-Corona et al., 2016). Additionally, beer packaging materials and volumes change as a

reflection of consumers' preferences, culture, climate and the geographical area where the beer is consumed (Sester et al., 2013).

### 2.2.3. Consumption situation and purchasing process variables

Drinking is primarily a social act in most cultures (Heath, 1987); and therefore, the environment and context in which beer is consumed is a relevant aspect. Beer has utility in multiple consumption situations and fulfils different needs, such as at concerts, at sporting events, at home, at parties, when watching TV, for camping and so on. So, when differentiating beer consumers, situational and consumption contexts should be considered. Regarding the context of beer consumption, previous research shows that the consumption situation (Giacalone et al., 2013) and the consumption momen*t* are important factors influencing beer preferences and consumption (Aquilani et al., 2015).

The beer consumption situational conditions are quite relevant; distinguishing between consumers that mostly drink beer "*out-of-home*" and "*at home*". The main difference between beer consumption "*out-of-home*" and "*at home*" is that at home the experience of drinking beer is focused on the beer as the key of the experience; while in the consumption in bars and restaurants the beer becomes an accompaniment to food (Gómez-Corona et al., 2016).

A major recent trend in the brewery sector is that consumers are more often drinking *beer at home* than in bars, pubs and restaurants, and since the average price of beer in a bar or pub is higher than in the retail sector, consumers can save considerably when drinking "*at home*" (Berkhout et al., 2014). Additionally, prior research suggests that beer consumption can be either a private or a social moment: consumers who prefer

private consumption are generally those who do not share their experiences; while consumers who prefer the social consumption usually belong to reference groups that share the same appreciation towards beer (Gómez-Corona et al., 2016). Finally, the beer purchasing process includes the evaluation of the price, the visual design of the package, the product distribution, the product differentiation (Chrysochou, 2014) and the product brand (Allison and Uhl, 1964).

## 3. RESEARCH QUESTIONS

The present study aims to examine the potential beer consumer segments and to develop beer consumer typologies. Accordingly, this research addresses the following questions:

RQ(1): "*Are beer consumers monolithic or are there different segments in the beer market?*".

RQ(2): "*What are the main characteristics of the beer consumer segments?*".

## 4. METHODOLOGY

### 4.1. Sampling and fieldwork

A pilot study was developed to determine whether the research instrument was valid. More specifically, the developed questionnaire was pre-tested among 20 respondents to check the ability of the respondents to understand the meaning of the questions. The target population is consumers aged 18 years and above; and for this reason two pre-screening questions were included in the questionnaire to ensure that the participants are older than 18 years and that they consume beer.

Then, we proceeded with a random sampling among consumers requesting information about their beer consumption using a self-administered web-based questionnaire through the Qualtrics software. The survey took about 4-5 minutes to answer and

participants were informed of the purpose of the research, but they were not compensated monetarily. Fieldwork was conducted among consumers residing in Spain in March 2015.

The research questionnaire was structured in four parts. The first part of the questionnaire consisted of two filter questions about beer consumption and consumer age using "*yes/no*" questions, since the study required information about beer consumers older than 18 years old –the legal age for alcohol consumption-. For this reason, participants who do not drink beer or are younger that the required age are screened out. The second part of the questionnaire, gathered information about the consumer-based variables. For measuring consumer-based variables a Likert-type 5-point scale was developed, meaning 1="*totally disagree*" and 5="*completely agree*". Similarly, the third part gathered information regarding product-based attributes. The last section of the questionnaire consisted of questions regarding consumption habits and socio-demographic characteristics. A total amount of 635 questionnaires was obtained, gathering 592 valid questionnaires, yielding a sampling error of 3.96% at a confidence level of 95%.

Regarding the sample profile, the 54.16 % of the respondents are between the ages of 18 to 30, while the 18.36 % are between 31 -40 years old and the 27.48% are older than 41 years. A total of 56.18 % of the participants were female; while the other 43.82% were male. In terms of education level, 15.07 % of participants have primary education, the 35.31 % have secondary education and the 37.18 % of the participants have university studies. Regarding the consumers' income, the greater percentage of participants (32.95%) has an income of 30.000-40.000€/year. Finally, the data indicated some characteristics of participants' beer consumption patterns, highlighting

that the majority of the respondents (59.72%) preferred the Pilsner beer type, and beer taste was reported as the main beer attribute (71%).

## 4.2. Variables and measurement scale

Factors affecting beer consumption were selected according to prior research (Table 1). Furthermore, consumer-based, product-based and consumption situation variables were also considered for the research. In order to measure *beer loyalty* a 6-item scale from Yoo et al. (2000) was adapted. Second, for measuring *product image*, we adapted a scale proposed by Netemeyer et al. (2004) and Pappu et al. (2005). Third, the beer *perceived quality* was measured using a scale adapted from Yoo et al. (2000) and Pappu et al. (2005). Then, following Yoo et al. (2000) beer *familiarity* was considered using a 3-item scale. For measuring the willingness to *pay a premium price* for beer the scale proposed by Netemeyer et al. (2004) was used. Likewise, in order to examine the purchase intention, a 3-item scale proposed by Netemeyer et al. (2004) was considered. Finally, the product *value for money* was measured using the scales proposed by Lassar et al. (1995) and Netemeyer et al. (2004). Similarly, beer product attributes, consumption habits and socio-demographic characteristics were also considered. So, the preferred beer sensory attributes were investigated such as flavour, colour, taste, texture, alcoholic degree and appearance. The beer type or style was also considered, as well as consumption frequency and place of consumption.

**Table 1.** *Factor loadings and reliability values*

| VARIABLES | INDICATORS | Factor Loading | Cronbach Alpha |
|---|---|---|---|
| **PRODUCT LOYALTY** Yoo et al. (2000) | LEA1: Even if other beverages had similar characteristics, I would prefer beer<br>LEA2: Even if other beverages had features that were similar to beer, I would prefer beer instead<br>LEA3: It makes sense to buy beer, instead of other beverages available in the market<br>LEA4: If I had to buy a beverage, beer would be my first option<br>LEA5: It makes sense to drink beer, instead other beverages available.<br>LEA6: I consider myself loyal to beer | 0.778<br>0.761<br>0.752<br>0.748<br>0.686<br>0.674 | 0.959 |
| **PRODUCT IMAGE** Netemeyer et al. (2004); Pappu et al. (2005) | IMG1: I have a good image of beer<br>IMG2: I have a good image of individuals that drink beer<br>IMG3:I associate some specific characteristics of beer immediately<br>IMG4: Beer has personality<br>IMG5: Beer is interesting | 0.801<br>0.776<br>0.760<br>0.650<br>0.573 | 0.940 |
| **PERCEIVED QUALITY** Yoo et al. (2000); Pappu et al. (2005) | PQAL2: Beer offers reliable quality<br>PQAL4: Beer has excellent characteristics<br>PQAL1: Beer has higher quality and attributes<br>PQAL3: Brand X offers trustworthy quality | 0.666<br>0.626<br>0.604<br>0.604 | 0.932 |
| **PRODUCT FAMILIARITY** Yoo et al. (2000) | FAM1: Beer is familiar to me<br>FAM3: Beer comes immediately to mind when I think about beverages<br>FAM2: I know about beer | 0.831<br>0.823<br>0.685 | 0.769 |
| **PREMIUM PRICE** Netemeyer et al. (2004) | PRE1: I am willing to pay a higher price for beer, rather than for other beverages<br>PRE2: I want to pay more for a beer, rather than for other beverages | 0.859<br>0.771 | 0.875 |
| **PURCHASE INTENTION** Netemeyer et al. (2004) | INT1: I would buy beer<br>INT2: It is likely that I would by beer<br>INT3: I will buy beer in the next month | 0.675<br>0.671<br>0.562 | 0.960 |
| **VALUE FOR MONEY** Lassar et al. (1994); Netemeyer et al. (2004) | VM1: Beer has a good relationship "*value for money*"<br>VM2: Beer offers high value, compared to its price | 0.659<br>0.636 | 0.850 |

## 4.3. Data analysis

## 4.3.1. Confirmatory factor analysis

A factorial analysis was performed on the items related from the literature related to beer consumption, in order to determine whether these factors could be grouped under general characteristics (Hair et al., 1998). For this purpose, the 31 selected items were

subjected to confirmatory factor analysis, through Varimax rotation in order to extract factors. The items that failed to load 0.50 or higher on one factor, or that loaded higher than 0.5 on two or more factors were removed from the scale (Hair et al., 1998). Measures of sampling adequacy indicated that the correlation matrix for a 26-item scale was suitable (Bartlett's Test of Sphericity: $x^2$=19263.87; df=465; p<0.000; Kaiser-Meyer-Oklin measure value of sampling adequacy=0.965). Then, Cronbach Alpha values were examined in order to measure the reliability of each factor. The reliability of the factors was acceptable, as results show adequate values for Cronbach Alpha coefficients for the all factors, exceeding the commonly accepted recommendation of values higher than 0.70 (Hair et al., 1998). Finally, confirmatory factor analysis of the proposed items identified a seven factor solution using the Varimax rotation procedure, jointly accounting for 84.48% of the explained variance (Table 1). The data analysis was performed with SPSS.

### 4.3.2. Cluster analysis

Cluster analysis uses information inherent in the factor scores, dividing the observations so that observations with similar factor scores will be grouped together into clearly identifiable groups (Chatfield and Collins, 1980).

In the present study, to determine the adequate number of clusters, a hierarchical cluster analysis was conducted using Ward's method (Punj and Stewart, 1983), and five clusters emerged as most acceptable. In order to refine the clusters, a k-means cluster analysis by the Euclidean distance method was performed specifying a five-cluster solution, resulting in the final interpretation. Then, the F-ratios computed through the Anova confirmed significant differences among the identified groups.

### 4.3.3. Manova analysis

Considering the obtained segments from cluster analysis, a Manova test was conducted to discriminate differences among the consumer segments (Hair et al., 1998) and to find out any differences exhibited on the product-based, consumer-based, situational and socio-demographic variables.

The overall multivariate tests using Pillai's Trace, Wilks' Lambda and Hotelling's trace were conducted, obtaining values of Pillai's Trace=1.917, $F(128, 15.239)$ p=0.000; Wilk's Lambda=0.018, $F(128, 28.320)$ p=0.000; and Hotelling's trace=16.459, $F(128, 67.571)$ p=0.000; respectively (Table 29. The five canonical discriminant functions accounted for 89.6% of the variance in the dependent variable, and the five functions were statistically significant.

**Table 2.** *Multivariate Manova test*

| Manova test | Value | F | df | Sig. |
|---|---|---|---|---|
| Pillai's trace | 1.703 | 21.693 | 1587 | 0.000 |
| Wilks' λ | 0.031 | 36.107 | 1587.475 | 0.000 |
| Hotelling's trace | 12.159 | 66.580 | 1577 | 0.000 |
| Roy's largest root | 10.840 | 179.197 | 529 | 0.000 |

In addition, *post hoc* analysis was developed using the Tuckey test (Hair et al., 1998), which reported significant differences between the five identified clusters for all items under research, as shown in Table 3.

**Table 3.** *Results for the five-cluster group solution*

| Variables | Indicators | Cluster Means | | | | Tuckey test | |
|---|---|---|---|---|---|---|---|
| | | Cluster 1 (n=234) | Cluster 2 (n=150) | Cluster 3 (n=82) | Cluster 4 (n=96) | F-Value | Significance (p<0.005) |
| **LOYALTY** | LEA1 | 1.94 | 1.20 | 3.34 | 4.56 | 436.710 | 0.000 |
| | LEA2 | 2.10 | 1.21 | 3.76 | 4.75 | 475.121 | 0.000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | LEA3 | 1.62 | 1.09 | 3.07 | 4.62 | 583.084 | 0.000 |
| | LEA4 | 1.62 | 1.12 | 3.39 | 4.73 | 657.814 | 0.000 |
| | LEA5 | 2.50 | 1.45 | 3.54 | 4.77 | 357.381 | 0.000 |
| | LEA6 | 1.43 | 1.11 | 3.20 | 4.37 | 558.177 | 0.000 |
| **IMAGE** | IMG1 | 3.21 | 2.19 | 3.88 | 4.58 | 224.448 | 0.000 |
| | IMG2 | 3.08 | 1.83 | 3.56 | 4.71 | 309.285 | 0.000 |
| | IMG3 | 2.85 | 1.84 | 3.51 | 4.56 | 291.992 | 0.000 |
| | IMG4 | 3.42 | 2.15 | 4.00 | 4.77 | 217.723 | 0.000 |
| | IMG5 | 3.15 | 1.95 | 3.88 | 4.71 | 330.364 | 0.000 |
| **PERCEIVED QUALITY** | PQAL1 | 3.32 | 2.11 | 4.02 | 4.79 | 346.888 | 0.000 |
| | PQAL2 | 3.38 | 2.31 | 3.78 | 4.67 | 191.675 | 0.000 |
| | PQAL3 | 3.48 | 2.40 | 4.24 | 4.78 | 259.369 | 0.000 |
| | PQAL4 | 3.13 | 2.13 | 3.85 | 4.67 | 301.072 | 0.000 |
| **FAMILIARITY** | FAM1 | 4.87 | 4.39 | 4.85 | 4.90 | 19.557 | 0.000 |
| | FAM2 | 3.96 | 2.84 | 4.68 | 4.92 | 111.543 | 0.000 |
| | FAM3 | 4.44 | 3.91 | 4.68 | 4.97 | 34.008 | 0.000 |
| **PREMIUM PRICE** | PRE1 | 1.55 | 1.09 | 1.61 | 2.77 | 90.913 | 0.000 |
| | PRE2 | 1.60 | 1.19 | 2.15 | 3.33 | 156.910 | 0.000 |
| **PURCHASE INTENTION** | INT1 | 2.76 | 1.48 | 3.78 | 4.83 | 369.111 | 0.000 |
| | INT2 | 2.67 | 1.33 | 3.66 | 4.71 | 376.938 | 0.000 |
| | INT3 | 2.35 | 1.25 | 3.68 | 4.81 | 496.987 | 0.000 |
| **VALUE FOR MONEY** | VM1 | 2.82 | 2.20 | 3.68 | 4.46 | 197.388 | 0.000 |
| | VM2 | 2.82 | 1.97 | 3.54 | 4.38 | 241.294 | 0.000 |

Likewise, the analysis supports significant differences regarding beer consumption patterns (Table 4).

**Table 4.** *Results for the four-cluster group solution for beer consumers*

| Variables | Indicators | Cluster Means | | | | Tuckey test | |
|---|---|---|---|---|---|---|---|
| | | Cluster 1 (n=234) | Cluster 2 (n=150) | Cluster 3 (n=82) | Cluster 4 (n=96) | F-Value | Significance (p<0.005) |
| **FREQUENCY CONSUMPTION** | Once a year | 7.7% | 6.7% | - | - | 15.935 | 0.000 |
| | Occasionally | 43.6% | 33.3% | 39.0% | 18.8% | | |
| | Once a week | 28.2% | 24% | 19.5% | 25.0% | | |
| | Several times a week | 13.7% | 26.6% | 39.0% | 39.6% | | |
| | Daily | 6.8% | 9.3% | 2.4% | 16.7% | | |
| **PLACE CONSUMPTION** | At home | 12.8% | 14.7% | 59.2% | 45.8% | 30.981 | 0.000 |
| | Out of home | 87.2% | 85.3% | 40.8% | 54.2% | | |
| **BEER PREFERRED ATTRIBUTES** | Taste | 78.6% | 77.3% | 53.7% | 66.7% | 6.154 | 0.000 |
| | Color | 1.7% | 5.3% | 9.8% | 12.5% | | |
| | Texture | 11.1% | 4.0% | 12.2% | 8.3% | | |
| | Aroma | 6.0% | 12.0% | 19.5% | 10.4% | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Alcohol graduation | 2.6% | 1.5% | 4.9% | 2.1% | | |
| **BEER TYPE** | Pilsner | 64.1% | 66.7% | 48.8% | 70.8% | 6.582 | 0.000 |
| | Red beer | 4.3% | 4.0% | - | 4.2% | | |
| | Dark beer | 6.0% | 6.7% | 7.3% | 4.2% | | |
| | Flavored beer | 12.0% | 8.0% | 4.9% | 4.2% | | |
| | Free alcohol beer | 6.0% | 9.3% | 22.0% | 6.3% | | |
| | Lager | 7.7% | 5.3% | 17.1% | 10.4% | | |
| **AGE** | 20-25 | 60.3% | 76% | 19.5% | 8.3% | 84.997 | 0.003 |
| | 26-30 | 10.1% | 6.7% | 12.2% | 43.8% | | |
| | 31-35 | 11.8% | 8.0% | 17.1% | 14.6% | | |
| | 36-40 | 9.3% | 5.3% | 7.3% | 8.3% | | |
| | 41-45 | 6.7% | 1.3% | 14.16% | 6.3% | | |
| | 46-50 | 0.9% | 2.7% | 26.8% | 10.4% | | |
| | 51 and older | 0.9% | - | 2.4% | 8.4% | | |
| **GENDER** | Male | 39.9% | 57.3% | 29.3% | 43.8% | 1.561 | 0.198 |
| | Female | 60.1% | 42.7% | 70.0% | 56.3% | | |

## 5. DISCUSSION OF RESULTS

In the first stage of the research, the authors developed a confirmatory factor analysis to establish meaningful factors, and seven factors were identified, namely loyalty, image, perceived quality, familiarity, premium price, purchase intention and value for money. Then, these variables were included in the cluster analysis, obtaining a five-cluster solution. Our findings report different groups of beer consumers, comprising 96 individuals in Cluster 1; 80 individuals in Cluster 2; 178 individuals in Cluster 3, 102 consumers in Cluster 4, and 136 consumers in Cluster 5. A clustered-based typology of beer consumers is now presented, offering an overall characterization of beer consumers.

### Cluster 1: "Beer lovers"

This consumer cluster represents the 16.22% of the sample (n=96), being characterized by their high involvement with beer. This cluster includes mostly 26-30 years old consumers (31.3% of the sample) who drink beer several times a week (43.8%). This

cluster is labelled as "*beer lovers*" because they are beer enthusiasts who appreciate and value the quality and intrinsic attributes of beer, being strongly loyal to the product. Similarly, "*beer lovers*" are willing to pay a premium price for beer and show a high purchase intention, compared to the other consumer segments. This is in line with previous research that shows that "*beer lovers*" consider beer quality as a key attribute and are more likely to taste and purchase specialty and craft beers (Aquilani et al., 2015). All these factors enable brewers to set higher prices for beer. Accordingly, "*beer lovers*" may shop at specialized beer stores, since they may be highly interested in craft beers, beer produced in small scale or non-industrial beer, in order to move away from the mainstream beer consumption.

Likewise, this group of consumers exhibits *high involvement* with beer. That is, they consider beer important in their lives, being highly interested in the product and more likely to search for differentiated beers (Petty and Cacioppo, 1984). Consequently, this cluster is characterized by the desire of exploring new taste experiences and new beer varieties (Gomez-Corona et al., 2016).

For brewers this consumer group could be considered as the most attractive, since these consumers are willing to pay a premium price for beer, show a high purchase intention and are strongly loyal to the product. Targeting this consumer group, it would be advisable to stress the beer higher product quality or special beer attributes, which could be used as the positioning variables. Moreover, this segment constitutes a great market opportunity for craft beers and specialty beers, which have different sensory attributes and flavours and higher prices compared to conventional or mainstream beers.

**Cluster 2: "Circumspect seniors"**

This consumer cluster comprises the 13.51% of the sample (n=80), being characterized by their balanced, pragmatic moderate beer consumption, since they mostly consume beer occasionally (48%) and out-of-home (68%). This cluster has the highest amount of older consumers, since most of them have more than 51 years (48%). Interestingly, their preferred beer type –after Pilsner beer- is the free-alcohol beer. For this reason they are labelled as "*circumspect seniors*". In addition, they are not strongly involved with beer, but have a moderate product loyalty, a favourable product image, as well as a high purchase intention.

This group of consumers shows the highest demand for free-alcohol beer, suggesting that low-alcohol beverages may be more appealing to older consumers, being in line with previous research reporting the relevance of socio-demographic characteristics in the consumption of free-alcohol beer (Chrysochou, 2014). Another potential explanation would be that older consumers are strongly concerned about the health and assign importance to healthy products. Similarly, this consumer segment places great importance to the product taste, followed by aroma.

Brewers targeting "*circumspect seniors*" should consider that free-alcohol beers are perceived as healthier alternatives to the regular ones; and in turn, marketing strategies should place more emphasis on the low alcohol content. Prior studies report that the success of free-alcohol beer depends largely on beer tasting equally as good as the regular alcohol counterparts (Chrysochou, 2014). Consequently, brewers should consider the negative beliefs about taste from consumers regarding free-alcohol beer; and in turn, marketing strategies need to emphasize the aspect of beer taste through

communication campaigns. Product trials and other direct marketing and promotional efforts that stimulate first trial are also recommended as marketing efforts.

**Cluster 3**:  **"Social drinkers"**

This cluster represents the 30.07% of the sample, being the biggest cluster in the number of beer consumers (n=178). This segment has the highest number of consumers belonging to age group 18-25 years old (57.2%), being the 48.1% male and the 51.9% female consumers. The findings from this segment reveal that these consumers are the ones who drink beer less often, since they consume beer occasionally (49.4%), showing the highest consumption out of home (87.8%). However, this group is disloyal to the product and shows a low purchase intention, while showing a moderate positive product image and perceived quality.

This group could be characterized by their social beer consumption, since it seems that they socialize when drinking beer; thus being "*social drinkers*". That is, this group entails a social component of beer consumption that is strongly triggered by the consumption situation or context: socialization. Similarly, this group of consumers is likely to share a beer with friends and peers in places that provide social experiences "out-of-home", being beer one of other elements for consumption, such as food. This is coherent with the fact that taste is the most important beer attribute for this consumer group (84.3%). Moreover, "*social drinkers*" show a low purchase intention for beer, and the reason may be the low product switching cost, since it is easy and it does not entail costs switching beer to other beverages for socializing. In addition, these consumers have a low product involvement, with poor product loyalty: beer does not play a key role in their daily routines.

Brewers targeting "*social drinkers*" should keep in mind that for this group beer is mostly consumed in moments of socialization, and that beer is considered as easy to switch to other alternative beverages, such as wine or spirits. That is, in such a social consumption context, it is easy and it does not entail costs switching to other beverages. Consequently, brewers should try to increase beer switching costs, improving the product image, the beer perceived quality and creating brand loyalty.

Similarly, these consumers associate drinking beer -and drinking experiences- with informal and relaxing occasions and contexts. More precisely, for these consumers, beer is a clear symbol of demarcation between *being at work* and *not being at work*. Considering that previous research shows that "*feeling relaxed*" is probably the most popular emotional association with beer consumption (Yang et al., 2012), brewers could emphasize the emotional experience of "*relaxation*" as the main appeal in beer communication campaigns. So, brewers targeting this group should emphasize trough communication and marketing campaigns that beer is the most adequate beverage to socialize and to feel "*relaxed*".

**Cluster 4: "Homelike women"**

This cluster represents the 17.23% of the sample (n=102); thus, accounting for the smallest segment of the sample. This segment comprises the highest number of female consumers (70.5%) having a greater tendency to consume beer "*at-home*" (75.4%) and reporting flavour as the main beer attribute (13.2%). In addition, this consumer group mostly drinks beer once a week (38.4%). This segment of consumers shows a low willingness to pay a premium price for beer. Additionally, the medium level of loyalty and importance given to product quality suggests a low beer involvement. However, these consumers have a high product purchase intention and a positive product image.

Accordingly, this group could be characterized as having balanced or moderate private beer consumption; and since the great majority of these consumers are female, this cluster is labelled as "*homelike women*". Considering their great beer consumption at-home, this group of consumers seems to be not involved with social activities that imply drinking. Moreover, female beer consumers are more health conscious (Chrysochou, 2014), and for this reason the nutritional benefits of beer could be one of the underlying motives for beer consumption.

Beer companies targeting "*homelike women*" should consider their preference for flavoured beers and their tendency to drink beer "*at home*". This segment constitutes a great market opportunity for specialty and craft beers, which offer new flavours different to conventional mainstream beers.

**Cluster 5**: "**Beer to fuddle**"

This cluster represents the 22.97% of the sample (n=136) and is characterized by their low product loyalty and poor product image. This consumer group has the highest number of consumers belonging to age group 18-25 years old (74.5%), and most of the consumers in this segment drink beer out-of-home (83.9%) several times a week (29.2%) and once a week (27.7%). So, it seems that these young consumers may be mainly drinking beer at bars, cafeterias and pubs. This segment is characterized as being a group of young consumers, who drink beer out-of-home, with low product loyalty and a low purchase intention, a poor product image and poor product perceived quality.

More precisely, this group of consumers shows the lowest values for beer perceived quality, suggesting that they do not have great interest in quality or beer attributes, and they do not consider beer as offering a reliable quality. Thus, it can be assumed that beer is considered as a *commodity* of the beverage category for this group, being perceived as

a product that can be used to "*get drunk*" or "*to fuddle*". Maybe, the fuddle or drunkenness effect is explicitly and directly searched by this group of young consumers. Likewise, they show a low purchase intention for beer. The reason may be lower switching cost of beer, since it is easy switching to other beverages when the purpose of the consumers is "*to fuddle*". Considering that they exhibit a price sensitive behaviour, private label brand beers are a good option to target this group of consumers, since they seek for low prices, while not being highly concerned about product quality –"*every beer is fine to fuddle*"-. Brewers should consider that this group is characterized by their young age when designing marketing campaigns; thus, being strongly influenced by technology and the internet (Palfrey and Gasser, 2008). Consequently, the internet and social networking will allow brewers to communicate and target this consumer group, establishing relationships.

**(Figure 1.** *Beer consumer clusters profile diagram*).

Therefore, regarding the first research question (RQ1): "*Are beer consumers monolithic or are there different segments in the beer market?*", our findings support that "*beer consumers cannot be seen as a homogenous consumer group*", since each consumer segment has its own preferences, needs and motivations for drinking beer. Research findings provide empirical support for a five-cluster solution; thus reporting five types of beer consumption with substantial differences among consumer segments. Therefore, five different consumer typologies have been identified, given that the emerged consumer segments have exhibited different consumption patterns and preferences (Figure 1). Further, and regarding the second research question (RQ2): "*What are the main characteristics of the beer consumer segments?*" different beer consumption profiles have been described. More precisely, the obtained consumer segments are labelled as "*beer lovers*", "*circumspect seniors*", *"social consumers", "homelike*

*women"* and *"beer to fuddle drinkers",* being the first segment the most attractive for brewers, since "*beer lovers*" are highly involved with beer, showing a high predisposition to pay a premium price for beer.

## 6. CONCLUSIONS

The present research provides a comprehensive clustered-based categorization of beer consumers. As a result, five consumer segments are obtained, which are then profiled on consumer-based, product-based and purchase/situational variables.

The major contribution of the present study is providing a clustered-based categorization of beer consumers, which may help brewers and beer marketers to better understand beer consumption in order to target the different consumer segments. Marketing actions based on consumer segmentation would be a beneficial strategy for brewers, who could manage beer as five different products, instead of considering beer as a single item. Likewise, the obtained findings draw interesting highlights for brewers and beer marketers to target beer consumers considering their distinct typologies.

This study entails some limitations to be addressed in future research. First, the study is limited to some product-based and consumer-based attributes, which creates an opportunity for including other consumption determinants such as brand image, brand loyalty, or psychographic variables such as consumers' lifestyle. Second, it would be advisable in future research to analyse if the obtained findings apply to a broader set of alcoholic beverages, such as wine or spirits. Finally, the present study was developed in one single market, and therefore, further research could include other markets for wider generalization of findings.

**REFERENCES**


Allison, R.I. and Uhl, K.P. (1964), "Influence of beer brand identification on taste perception", *Journal of Marketing Research*, Vol. 1 No.3, pp. 36–39.

Aquilani, B., Laureti, T., Poponi, S. and Secondi, L. (2015), "Beer choice and consumption determinants when craft beers are tasted: An exploratory study of consumer preferences", *Food Quality & Preference*, Vol. 41, pp. 214-224.
Ascher, B. (2012), *Global Beer: The Road to Monopoly*, American Antitrust Institute, Associated Press, Washington, DC.

Berkhout, B., Bertling, L., Bleeker, Y., De Wit, W., Kruis, G., Stokkel, R. and Theuws, R. (2014), *The Contribution made by Beer to the European Economy*. A report commissioned by The Brewers of Europe and conducted by Regioplan Policy Research.

Bredhal, L. (1999), "Consumers' cognitions with regard to genetically modified foods: Results of a qualitative study in four countries", *Appetite,* Vol. 33 No.3, pp.343-360.

Cardello, A.V., Pineau, B., Paisley, A.G., Roigard, C.M., Chheang, S.L., Guo, L.F., Hedderley, D.I. and Jaeger, S.R. (2016), "Cognitive and emotional differentiators for beer: An exploratory study focusing on uniqueness", *Food Quality & Preference,* Vol. 54 No.1, pp. 23-38.

Chatfield, C. and Collins, A.J. (1980), *Introduction to multivariate analysis.* Chapman and Hall, London, UK.

Choi, D. Y. and Stack, M. H. (2005), "The all-American beer: a case of inferior standard(taste) prevailing?", *Business Horizons*, Vol. 48 No.1, pp. 79-86.

Chrysochou, P. (2014), "Drink to get drunk or stay healthy? Exploring consumers' perceptions, motives and preferences for light beer", *Food Quality and Preference*, Vol. 31, pp. 156–163.

Daems, V. and Delvaux, F. (1997), *Multivariate analysis of descriptive sensory data on 40 commercial beers*, pp. 373-380.

Dick, A.S. and Basu, K. (1994), "Customer loyalty: Toward and integrated conceptual framework", *Journal of the Academy of Marketing Science*, Vol. 22 No.2, pp. 99-113

Gómez-Corona, C., Escalona-Buendía, H.B., García, M. and Chollet, S. (2016), "Craft vs industrial: Habits, attitudes and motivations towards beer consumption in Mexico", *Appetite*, Vol. 96 No. 5, pp. 358-367.

Giacalone, D., Bredie, W. L. P. and Frøst, M. B. (2013), "All-In-One Test: A rapid and easily applicable approach to consumer product testing", *Food Quality & Preference*, Vol. 27 No. 2, pp. 108–119.

Hair, J., Black, B., Babin, B., Anderson, R. and Tatham, R. (1998), *Multivariate Data Analysis*, Prentice-Hall, Englewood Cliffs, NJ.

Heath, D.B. (1987), "Anthropology and alcohol studies: current issues", *Annual Review of Anthropology,* Vol. 16 No.1, pp. 99-120.

Hill, L. and Casswell, S. (2004), *Alcohol advertising and sponsorship: Commercial freedom or control in the public interest*. In N. Heather & T. Stockwell (Eds.), *The Essential Handbook of Treatment and Prevention of Alcohol Problems*, John Wiley & Sons, Chichester.

Lapierre, J. (2000), "Customer perceived value in industrial contexts", *The Journal of Business & Industrial Marketing,* Vol. 15 No. 2/3, pp. 122-140.

Lassar, W., Mittal, B. and Sharma, A. (1995), "Measuring Customer-based Brand Equity", *Journal of Consumer Marketing*, Vol. 12 No.4, pp. 11-19.

Lee, L., Frederick, S. and Ariely, D. (2006), "Try it, you'll like it: The influence of expectation, consumption and revelation on preferences for beer", *Psychological Science,* Vol. 17 No.12, pp. 1054-1058.

Leliévre, A., Chollet, S., Adbi, H. and Valentin, D. (2008), "What is the validity of the sorting task for describing beers?: A study using trained and untrained assessors", *Food Quality & Preference,* Vol. 19, pp. 697-703.

Mejlholm, O. and Martens, M. (2006), "Beer identity in Denmark", *Food Quality and Preference*, Vol. 17, pp. 108-115.

Mueller, S., Lockshin, L. and Louviere, J. (2010), "What you see may not be what you get: Asking consumers what matters may not reflect what they choose", *Marketing Letters,* Vol. 21 No.4, pp. 335–350.

Netemeyer, R., Krishnan, B., Pullig, C., Wang, G., Yaggi, M., Dean, D., Ricks, J. and Wirth, F. (2004), "Developing and Validating Measures of Facets of Customer-Based Brand Equity", *Journal of Business Research*, Vol. 57, pp. 209-224.

Oliver, R.L. (1999), "Whence customer loyalty?", *Journal of Marketing*, Vol. 63 No. 1, pp. 33-44.

Palfrey, J. and Gasser, U. (2008), *Born digital: Understanding the first generation of digital natives*, Basic Books: New York, NY.

Pappu, R., Quester, P. and Cooksey, R. (2005), "Consumer-based Brand Equity: Improving the Measurement. Empirical Evidence", *Journal of Product & Brand Management*, Vol. 14 No. 3, pp. 143-154.

Pettigrew, S. and Charters, S. (2006), "Consumers' expectations of food and alcohol pairing", *British Food Journal,* Vol. 108 No.3, pp. 169-180.

Petty, R.E. and Cacioppo, J.T. (1984), "The effects of involvement on responses to argument quantity and quality: central and peripheral routes to persuasion", *Journal of Personality and Social Psychology,* Vol. 46 No.1, pp. 69-81.

Punj, G. and Stewart, D. (1983), "Cluster analysis in marketing research: review and suggestions for application", *Journal of Marketing Research*, Vol. 20, pp. 134-148.

Riet, J., Sijtsema, S. J., Dagevos, H. and De Bruijn, G. (2011), "The importance of habits in eating behaviour. An overview and recommendations for future research", *Appetite*, Vol. 57, pp. 585-596.

Sester, C., Dacremont, C., Deroy, O. and Valentin, D. (2013), "Investigating consumers' representations of beers through a free association task: A comparison between packaging and blind conditions", *Food Quality & Preference,* Vol. *28* No.2, pp. 475-483.

Silva., A.P., Jager, G., Van Bommel, R., Van Zyl, H., Voss, H.P., Hogg, T., Pintado, M. and De Graaf., C. (2016), "Functional or Emotional?: How Dutch and Portuguese conceptualise beer, wine and non-alcoholic beer consumption", *Food Quality & Preference,* Vol. 40, pp. 54-65.

Sirohi, N., McLaughlin, E.W. and Wittink, D.R. (1998), "A model of consumer perceptions and store loyalty intentions for a supermarket retailer", *Journal of Retailing,* Vol. 74 No. 2, pp. 223-245.

Snoj, B., Korda, A. and Mumel, D. (2004), "The relationships among perceived quality, perceived risk and perceived product value", *Journal of Product & Brand Management,* Vol. 13 No.3, pp. 156-167.

Sohrabvandi, S., Mortazavian, A.M. and Rezaie, K. (2012), "Health-related aspects of beer: A review", *International Journal of Food Properties,* Vol. 15 No. 2, pp. 350-373.

Thompson, N. J. and Thompson, K. E. (1996), "Reasoned action theory: An application to alcohol-free beer", *Journal of Marketing Practice. Applied Marketing Science,* Vol. 2 No. 2, pp. 35–48.

Thomson, D.M., Crocker, C. and Marketo, C.G. (2010), "Linking sensory characteristics to emotions: An example using dark chocolate", *Food Quality & Preference,* Vol. 21 No. 8, pp. 1117-1125.

Valentin, D., Chollet, S., Beal, S. and Patris, B. (2007), "Expertise and memory for beers and beer olfactory compounds", *Food Quality & Preference,* Vol. 18*,* pp. 776-785.

Wright, C.A., Bruhnc, C.M., Heymann, H. and Bamforth, C.W. (2008), "Beer and wine consumers' perceptions of the nutritional value of alcoholic and nonalcoholic beverages", *Institute of Food Technologists,* Vol. 73 No. 1, pp. 8-11.

Yang, S., Allenby, G.M. and Fennel, G. (2002), "Modeling variation in brand preference: The roles of objective environment and motivating conditions", *Marketing Science,* Vol. 21 No.1, pp. 14-31.

Yoo, B., Donthu, N. and Lee, S. (2000), "An examination of Selected Marketing Mix Elements and Brand Equity", *Academy of Marketing Science*, Vol. 28 No. 2, pp. 195-211.

Zaichkowsky, J.L. (1985), "Measuring the Involvement Construct", *Journal of Consumer Research*, Vol. 12, pp. 341-35.

Zeithaml, V.A. (1988), "Consumer Perceptions of Price, Quality and Value: A means-end model and synthesis of Evidence", *Journal of Marketing,* Vol. 52 No. 3, pp. 2-22.