



**CATÓLICA**  
UNIVERSIDADE CATÓLICA PORTUGUESA | PORTO  
Escola Superior de Biotecnologia

EMOTIONS ELICITED BY DIFFERENT BEVERAGES BY PORTUGUESE AND DUTCH  
CONSUMERS

By

Joana Filipa Sequeira da Costa

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Thesis presented to *Escola Superior de Biotecnologia* of the *Universidade Católica Portuguesa* to fulfill the requirements of Master of Science degree in Biotecnology and Food Innovation

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## Abstract

**Introduction:** Food products have perceptual characteristics and conceptual associations that promote emotions on the consumer, which later drive the consumption behavior. Quantifying them provides insight for product development and nutritional patterns of consumption. Self-report questionnaires are the most common tools used to achieve this goal, used for the aim of this study.

**Materials and Methods:** The goal of the study was analyze which emotional associations different cultures associated with different beverage categories. Seven beverages were selected, for the alcoholic category: beer, wine and radler were analyzed and for non-alcoholic: non-alcoholic beer (NAB), cola, natural orange juice (NOJ) and water. The survey was built using Qualtrics software platform and distributed into two representative countries of the north and south of Europe, the Netherlands (NL) and Portugal (PT) respectively. The data collected in the Netherlands (n=449) and Portugal (n=423) provided information about the consumer gender, age, nationality, frequency of consumption, liking and emotional associations. From these data the type of consumer was defined per beverage and the frequencies of each emotion were analyzed first regarding their applicability for the beverage, excluding further the ones considered non-applicable and second without and with culture influence. The analysis without culture influence allowed to obtain a general emotion pattern, made by summing up the scores per emotion of both countries. In both cases no consumers were excluded from the analysis.

**Results:** Alcoholic beverages and non-alcoholic beverages showed to promote feeling more emotions, but alcoholic ones more intensely than non-alcoholic, making also feel less negative emotions. For alcoholic beverages it was observed that positive low arousal emotions were produced by wine (*amused, pleased and loving*) and radler (*happy, pleased, and relaxed*). Radler also showed to decrease intensely in the NL negative emotions while making feel *responsible* and *rational* in PT. Beer produces positive high arousal emotions (*free, joyful and exuberant*) felt more in PT. For non-alcoholic beverages was observed that NAB makes feel *disappointed*, and specifically *responsible, conscious and rational* in the NL and *adventurous* in PT. Cola makes feel *energetic* and interestingly makes feel more *conscious* in PT and less in the NL. NOJ consumption promotes feeling more positive emotions *energetic, happy, pleased and good*. Water consumption makes consumers feel more *conscious*.

**Discussion:** Wine positive low arousal emotions are intensely felt in PT, due to diverse culinary existent in PT since the main reason of wine consumption is its combination with food. Beer positive high arousal emotions are felt with weak intensity in the NL since the consumption is regular in order to decrease negative emotions. Radler is consumed in northern countries where it shows a similar emotion pattern as other alcoholic beverages, while in PT it seems to be a low calorie option. NAB is still compared to beer, especially in the NL, but Portuguese consumers' associate *adventurous* showing they are keener to consume it. Cola was associated with the emotion *energetic* due to its nutritional profile, although *conscious* was felt less in the NL and more in PT indicating different contexts of consumption. NOJ is linked with a healthy connotation and water showed consumers have a conscious consumption knowing its physiological importance.

**Conclusion:** self-report questionnaires have potential to develop emotion profiles within different beverages categories. Generally, the alcoholic beverages serve the purpose of obtaining relaxation and relieving from negative emotions, while non-alcoholic beverages focus more on feeling energized and obtain the nutritional benefits of the beverage consciously, especially with NOJ and water. Wine and beer consumption produce positive emotions felt more intensely by Portuguese consumers, while Dutch feel strongly relieve from negative and neutral emotions. Radler has an emotion profile similar to other alcoholic beverages in the NL and a conscious consumption in PT. NAB promotes neutral emotions in the NL but in PT consumers are keener to consume it. Cola is an *energetic* beverage, although it was expected *happy* to be highlighted, having In PT a *conscious* consumption is.

**Keywords:** Emotions; Self-report questionnaire; Beverages; Portugal; Netherlands;

## Resumo

**Introdução:** Os produtos alimentares possuem características perceptuais e associações conceptuais que determinam as emoções do consumidor, as quais guiam o comportamento de consumo alimentar. Quantificá-las fornece informação para o desenvolvimento de produtos e padrões nutricionais de consumo. A aplicação de questionários é a ferramenta mais comumente usada para atingir este objectivo e usada neste estudo.

**Materiais e métodos:** O objectivo deste estudo visou analisar que associações emocionais diferentes culturas associam com diferentes categorias de bebidas. Sete bebidas foram seleccionadas, para a categoria de bebidas alcoólicas: cerveja, vinho e radler e para não-alcoólicas: cerveja sem álcool (NAB), cola, sumo de laranja natural (NOJ) e água. O questionário foi desenvolvido usando a *Qualtrics software platform* e distribuído em dois países representativos do norte e sul da Europa, Holanda (NL) e Portugal (PT) respectivamente. A informação recolhida na Holanda (n=449) e em Portugal (n=423) forneceu informação sobre o género, idade, nacionalidade, frequência de consumo, preferência (gosto) e associações emocionais do consumidor. Desta informação o tipo de consumidor de cada bebida foi definido e as frequências de cada emoção foram analisadas, primeiro quanto à sua aplicabilidade para a bebida, excluindo de seguida as consideradas não-aplicáveis, segundo sem e com influência da cultura. A análise sem a influência da cultura permitiu obter o padrão de emoções geral, feito através da soma das frequências de cada emoção de ambos os países. Em ambos os casos não consumidores foram excluídos da análise.

**Resultados:** Bebidas alcoólicas e não-alcoólicas mostraram promover mais emoções, mas as alcoólicas com mais intensidade do que as não-alcoólicas, fazendo sentir também menos emoções negativas. Para as bebidas alcoólicas foi observado que emoções positivas de baixa excitação são produzidas pelo vinho (*divertido, agradável e amoroso*) e pela radler (*feliz, agradável e relaxado*). A radler diminui também intensamente na NL emoções negativas enquanto faz sentir em PT *responsável e racional*. A cerveja produz emoções de alta excitação (*livre, alegre e exuberante*) sentidas mais intensamente em PT. Para bebidas não alcoólicas observou-se que NAB faz sentir *decepcionado* e especificamente na NL *responsável, consciente e racional*, e em PT *aventureiro*. A cola faz sentir *energético* e interessantemente mais *consciente* em PT e menos na NL. O consumo de NOJ promove emoções positivas: *energético, feliz, agradável e bem*. A água faz os consumidores sentirem-se *conscientes*.

**Discussão:** As emoções de baixa excitação produzidas pelo consumo de vinho são mais intensamente sentidas em PT, devido à diversa culinária pois a principal razão de consumo é a combinação com a alimentação. A cerveja produz emoções de alta excitação sentidas com menos intensidade na NL devido ao consumo regular para diminuir emoções negativas. A radler é consumida principalmente em países nórdicos onde tem um padrão de emoções similar a outras bebidas alcoólicas, em PT parece ser vista como uma opção baixa em calorias. A NAB é comparada com cerveja, em particular na NL, em PT é associado *aventureiro* mostrando estarem mais pré-dispostos ao consumo de NAB. O consumo de cola foi associado à emoção *energético* devido ao seu perfil nutricional, apesar de *consciente* ser sentido menos na NL e mais em PT indicando diferentes contextos de consumo. O NOJ possui uma conotação saudável. A água demonstrou que os consumidores têm um consumo *consciente*, revelando que sabem a sua importância fisiológica.

**Conclusão:** Os questionários possuem potencial para desenvolver perfis emocionais dentro de diferentes categorias de bebidas. As bebidas alcoólicas são usadas para obter relaxamento e alívio de emoções negativas, enquanto as não alcoólicas são consumidas conscientemente pelas suas características energizantes e perfil nutricional, visto para o NOJ e a água. O vinho e a cerveja produzem emoções positivas sentidas mais em PT, enquanto na NL o alívio de emoções negativas e neutras é maior. A radler tem um perfil de emoções similar a outras bebidas alcoólicas na NL e um consumo consciente em PT. A NAB promove emoções neutras na NL mas em PT os consumidores estão pré-dispostos ao consumo. Cola é uma bebida energética apesar de se esperar que a emoção *feliz* sobressaísse, tendo em PT um consumo *consciente*.

**Palavras-chave:** emoções; questionário; bebidas; Portugal; Holanda;

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## Abbreviations list

NAB: Non Alcoholic Beer

NL: Netherlands

NOJ: Natural Orange Juice

PT: Portugal

## 1. Introduction

Food consumption is not only about satisfying physical hunger, it involves many factors related with the choice, such as appetite, cost, food accessibility, culture and emotions (Lowe, Bocarsly, & Parigi, 2008). Currently, products are often similar with respect to quality and price, for this reason the emotional component of the product is becoming more important as a mean to achieve some differential advantage in the market, since the emotions evoked by products are one of the factors related with the pleasure of buying, owning, and using them (Hirschman & Holbrook, 1982).

Emotions are a complex psycho-physiological experience linked to a specific object or stimulus and are fast, intense and last short (Ferrarini, Carbognin, Casarotti, Nicolis, Nencini, & Meneghini, 2010). Implicit emotions take place without the person awareness, so they are evoked automatically by the stimulus itself (Gyurak, Gross & Etkin, 2011) and are observed on the person behavior or physiological response (Kihlstrom, Mulvany, Tobias, and Tobis, 2000). Explicit emotions involve the person awareness, meaning the response produced is conscious (Kihlstrom, Mulvany, Tobias & Tobis, 2000). Emotions are classified according to their valence (positive - negative) and arousal (high intensity - low intensity) (Macht, 2008). This classification has been found to contribute to assess different emotions with different influences on the eating behaviour (Macht, 2008).

In the emotions measurement field many tools have been used according to the type of emotion to be assessed. To measure implicit emotions non-verbal methods or psycho-physiological tools are used (Köster & Mojet, 2015). They focus on the evaluation of the consumer expressive reactions like body behavior, vocal characteristics and physiological reactions such as skin conductance and heart rate. These methods do not require the user attention or language skills however they are not sensitive enough (Ludden, Schifferstein & Hekkert, 2009). To measure explicit emotions verbal self-report methods are used (Köster & Mojet, 2015), usually through questionnaires, although to make them more intuitive and suitable for cross-cultural studies, graphical elements can be incorporated such as photos or cartoons (Schifferstein et al, 2013). Questionnaires are the most frequently applied method in the food field (Jiang, King, & Priniawatkul, 2014), it requires an emotion lexicon that is a list of words used to identify each emotion (Mohammed & Turney, 2010). The emotion lexicon is developed by using first previous research on emotions, secondly consumer feedback obtained through focus groups or consumer interview. On this stage data about liking, emotional associations when thinking, seeing or consuming the product and consumer information is collected. Afterwards, the terms collected are evaluated making sure they belong to an emotion, the meaning is clear and not redundant and they are well understood among the consumers. The last stage is the questionnaire where it is evaluated which terms were used more frequently, are statistically discriminant and are appropriate for the consumers (Jiang, King, & Priniawatkul, 2014).

### 1.1. Emotions and food choice

In food choice emotions are influenced in two different directions. In one hand food choice has an effect on consumer emotions and on the other consumer emotions influence food choice and intake. The first can be observed by the impact of food intrinsic (nutritional composition) and extrinsic properties in the emotional state, while the second is more dependent on the individual and has been largely studied regarding food-disorders, thus negative emotions (Greeno & Wing, 1994). However, both these relations rely on the product sensory characteristics, nutritional content and the individuals' characteristics (Jiang, King, & Priniawatkul, 2014).

The individual specific characteristics are determinant, especially the physical or nutritional state (e.g. hunger, thirstiness and fatigue), the mood and psychological state, the role of the individual with the food product (cooker or consumer), the culture, the liking effect (liking or disliking the product previously), the gender, the age and the product familiarity or memories (Desmet & Schifferstein, 2008).

The influence of the consumer mood in his intake is observed in the degree of arousal and valence of his emotions. It is generally observed that emotions high in arousal suppress eating and that negative emotions can either increase or decrease food intake, however little is known about the effects of positive emotions on eating (Köster & Mojet, 2015), but it seems that when people are in a state of joy (positive high arousal), food may taste even better (Macht, 1999) and there is a higher tendency to



consume healthy food than during negative emotions (Lyman, 1982). Negative emotions, when linked with high arousal, suppress the food intake, while negative emotions at low arousal increase the motivation to eat (Macht, 2008). The most studied negative emotion is stress that is related with low level of food consumption when compared with the feeling depressed (Mehrabian & Riccioni, 1986). For anger usually people have a high desire to eat impulsively or choose food with intense flavors, the same occurs for fear and sadness, especially in women.

Gender and age are also decisive elements in food choice. Generally, women are the most affected with higher body dissatisfaction and greater drive for thinness, leading to negative emotions development and consequently to comfort foods. Comfort foods are not necessarily high fat and high sugar meals or snacks, it seems that females select as comfort foods sweet snack foods (i.e., chocolate, ice cream) leading to guilty feelings afterwards (Barry, Grilo, & Masheb, 2002) and males identify meal-related foods (i.e., steak, casseroles) as comfort foods, as well as alcohol consumption or smoking as a way to cope with stress (Jiang, King, & Priniawatkul, 2014). In terms of age, younger people prefer more snack-related comfort foods compared to those over 55 years old (Wansink, Cheney, and Chan, 2003).

The consumer familiarity or memory related with a food is noticed when consumers even before tasting the food product already have emotions towards it. The intensity of the emotions increase as the frequency of product usage increases, while non-product users are more focused on negative emotions (Desmet & Schifferstein, 2008). Familiarity or memory are context and company dependent (Köster, Møller, & Mojet, 2014), thus dependent on the culture and with the individual eating habits (Meiselman, 2016). Since emotions are context dependent it is possible that the same consumer gives different emotional responses towards the same food at different places (Jiang, King, & Priniawatkul, 2014).

## 1.2. Beverage and consumption pattern

The majority of the research done on the field of emotions focus on solid foods rather than on beverages, therefore it is of interest to study and compare emotions associated with different beverages. Most consumed beverages can be divided in two categories: alcoholic and non-alcoholic. In the first takes place wine, beer, and radler and in the second non-alcoholic beer (NAB), cola, natural orange juice (NOJ) and water. It was analyzed their nutritional profile as well as their consumption in two representative countries of the North and South of Europe, The Netherlands (NL) and Portugal (PT).

Beer, wine and radler are alcoholic beverages that when consumed in moderation can be a part of a healthy and balanced lifestyle (Bamforth, 2002). A moderate intake is considered as the daily consumption of no more than one drink for women and 2 for men (Meyerhoff, Bode, Nixon, de Bruin, Bode, Seitz, & 2005; US Department of Agriculture, 1990). It is established that light-to-moderate consumption compared with abstention or high consumption is associated with lower rates of mortality related with coronary heart disease (Rimm, Klastky, Grobbee & Stampfer, 1996) and ischemic stroke (Reynolds, Lewis, Nolen, Kinney & Sathya, 2003), while heavy alcohol consumption is associated with higher rates of mortality. In terms of alcohol quantification, beer provides 3 to 6% alcohol by volume (Bamforth, 2002), while wine provides 8-15% alcohol by volume (German & Walzen, 2000). It was observed for both wine and beer a reduction on mortality for individuals who consume a moderate amount between 10–20g of alcohol per day (Ruf, 2003; Gerhauser, 2005). Although with different profiles, the benefits of both beverages rely on their phenolic content with antioxidant properties and anti-inflammatory effects, whose are believed to provide health benefits and prevent diseases like atherosclerotic cardiovascular disease, diabetes, and cancer (Bamforth, 2009; Aleixandre, Aleixandre-Tudó, Bolaños-Pizzaro & Aleixandre-Benavent, 2013; Lindberg & Amsterdam, 2008). However, the alcohol contained also plays an important role: increases the level of high-density lipoprotein (HDL) cholesterol and reduce aggregation of blood platelets (Ghiselli, Natella, Guidi, Montanari, Fantozzi & Scaccini, 2000; Natella, Maconem, Ramberti, Forte, Mattivi, Matarese & Scaccini, 2011). Radler is categorized as a mix of beer with lemon soda falling into the category of ready to drink beverages, pre-mixed prior to consumption (Anderson, Suhrcje & Brookes, 2010), with no greater data about expected long term effects or health benefits.

The category of non-alcoholic beverages include NAB, soft drinks, fruit juices, and water. NAB was positioned in the middle of beer and soft drinks, although his name implies it doesn't contain alcohol it is noticeable a small content that varies with the country where it is produced. In Portugal NAB must contain less than 0,5% alcohol by volume (Portaria n. 1/96), whereas in the Netherlands up to 0,1% alcohol by volume is permitted (Bierverordening, 2002). Its consumption has increased due to driving concerns, health concerns, for religious reasons, and also because NAB provides the sensory and health benefits as a regular beer without the delivery of alcohol (Sohrabvandi, Mortazavian & Rezaei, 2012). Soft drinks are defined as non-alcoholic carbonated or noncarbonated beverages containing caloric sweeteners and flavorings (Popkin, Armstrong, Caballero, Frei, and Willet, 2006). In this study was approached cola as a representative of a soft drink. These category of beverage are the least recommended due to high energy density and lack of nutrients. The sweeteners contained promote dental caries and increase energy intake related with weight gain (Ludwig, Peterson & Gortmaker, 2001; Raben, Vasilaras, Moller & Astrup, 2002; Schulze, Manson, Ludwig et al, 2004; Jones, Woods, Whittle, Worthington & Taylor, 1995), and consequently to obesity and increased risk of type 2 diabetes (Popkin, et al., 2006). Fruit juices are beverages that are composed exclusively of an aqueous liquid or liquids extracted from one or more fruits or vegetables with no added caloric sweeteners (Popkin, et al., 2006). These provide most of the nutrients of their natural source, but with high energy content and lack of fiber, therefore there is no need to consume them and the consumption of whole fruits should be encouraged for satiety and energy balance (Popkin, et al., 2006). The last beverage of the non-alcoholic beverages category is water, it is required for normal physiologic functions, metabolism and as a source of essential minerals such as calcium, magnesium and fluoride (Popkin, et al., 2006). The lack of consumption, dehydration, showed side effects such as impaired cognition, moodiness, poor thermoregulation, reduced cardiovascular function, and impaired physical work capacity (Popkin, et al., 2006). In general acute dehydration leads to lack of performance in work and exercise (Maughan, 2003). On the other hand, improved hydration shows reduced kidney stone occurrence (Siener & Hesse, 2003; Borghi, Meschi, Amato, Briganti, Novarini & Giannini, 1996). Although, an excessive intake is rare it is still possible, resulting in the dilution of body fluids and a low serum sodium concentration (Hew-Butler, Almond, Ayus et al., 2005).

Among several factors, beverage choice is related with the beverage nutritional composition, consumption context and meal pairing. For beverages the main macronutrients affecting choice are sugar (carbohydrate) and alcohol content, but the beverage carbonation also plays an important role on the decision. The decision of picking a carbohydrate-rich food has been observed to be related with mood improvement by increasing the brain serotonin and also decrease the stress response (Gibson, 2006). Usually, high energy density beverages are carbonated, which are not likely to be paired with vegetables but frequently with energy-rich foods (Mueller & Jaeger, 2012). Juices seem an alternative to alcohol for children and also an alternative to water during a meal, due to taste preferences (Drewnowski, 1997). Alcoholic beverages are more associated with social events, being wine related with complex meals and beer with snacks (Mueller & Jaeger, 2012).

Additionally, beverage choice depends on the cultural context. Culturally is established that the Dutch have two main meals with different relevance, being lunch a quick small cold meal and dinner a large warm one, while Portuguese meals have the same importance, meaning the consumption of the same proportions at lunch and dinner. This has a great impact in what concerns drinking pattern, Dutch consumers do not drink alcoholic beverages during lunch and are usually the consumption is done during weekends, while Portuguese consumers consume the same amount at the two meals and also commonly at night during weekdays and weekends (Silva, Jager, van Zyl, Voss, Pintado, Hogg & de Graaf, 2015b). The frequency of consumption per beverage in the Dutch and Portuguese culture can be found in the table 1 below. Generally Portugal is perceived as a wine country and the Netherlands as a beer country (Silva et al, 2015b), due to bigger consumption of both beverages on the respective countries. Radler and NAB are recent beverages on the market when compared with beer or wine, but they never became very popular in European markets. In particular NAB, since radler had a boom, with an increase of consumption on recent years. Regarding soft drinks, specifically of cola, the annual consumption is bigger in the NL in comparison to PT. For fruit juices, including NOJ, the average per

capita consumption in 2014 was for Portugal 9,8 L and for the Netherlands 26,8 L (Statista, 2016). For water, the annual consumption seems to be bigger in the NL.

Table 1. Alcoholic and non-alcoholic beverages frequency of consumption.

Frequency of consumption	Netherlands	Portugal
Wine	306,6 L <sup>a</sup>	450 L <sup>a</sup>
Beer	1212.2 L <sup>b</sup>	492.7 L <sup>b</sup>
Radler	1150 L <sup>c</sup>	500 L <sup>d</sup>
NAB	1170 L <sup>e</sup>	-
Cola	73 L <sup>f</sup>	42 L <sup>f</sup>
NOJ	26,8 L <sup>g</sup>	9,8 L <sup>g</sup>
Water	640.000 L <sup>h</sup>	62.000 L <sup>i</sup>

a) 2014 annual consumption (Wine Institute, revised in 2015).

b) 2014 annual consumption (Batista, 2014).

c) 2015 annual consumption (Pieters, 2016).

d) 2013 annual consumption (Batista, 2014).

e) 2014 annual consumption (Gowling, 2014).

f) 2011 per capita consumption (Check, Dodson & Kirk, 2012).

g) 2014 per capita consumption (Statista, 2016).

h) 2013 annual consumption (Statista, 2013).

i) 2009 annual consumption (Instituto nacional de estatística, 2009).

### 1.3. Relevance and research questions

Beverage choice is a field of interest however there is still areas that require more research. For instances, the cultural influence and the beverage alcohol content, that may lead to choose one beverage instead of another and the consumption pattern, involved in the nutritional status of the consumer and overall health. From the nutritional point of view it is interesting due to the fact that moderated consumption of alcohol can be a part of a healthy life style but, excessive alcohol consumption leads to health consequences. Understand how beverages are chosen and perceived will provide greater knowledge of consumer behavior and beverage choice, helpful for the industry and nutritionists. Additionally, previous studies in beverage choice field have mostly focused on the evaluation of one single beverage (Mueller & Jaeger, 2012), suggesting a big gap in the comprehension of the consumer choice between different beverages. Usually studies assess solid food and beverages choice together, so studying it separately could give more insight about the consumer emotional profile. These two issues are addressed in this study since it focused only on beverages from different categories covering almost all range of beverages types.

The main goal of this study was to assess which emotional associations different cultures associated with different beverage categories. For this purpose a survey was developed for data collection of individual-specific information (e.g. gender, age and nationality), frequency of consumption, liking and emotions associated. These variables will provide greater insight about the emotional and consumer profile per beverage, allowing to answer the following questions:

- Which emotions consumers with different cultures associate with the seven beverages?
- What type of consumer, in terms of gender and age, consume each one of the beverages?
- What emotions are increased and decreased with each beverage consumption?
- As Portugal is seen as greater wine producer and consumer and the Netherlands as a producer and consumer of beer, does it reflects in the emotion patterns produced between countries?
- Is there a difference between the emotion pattern produced by alcoholic and non-alcoholic beverages?

In this study the context was not explicitly mentioned, leaving it to the consumer to decide in which context was assessing the beverage consumption.

## 2. Materials and methods

### 2.1. Design and procedure

For the research goal explicit emotions were assessed using as a tool a self-report questionnaire for data collection. The explicit emotions evaluated were based on the consumer previous memories/experiences with the beverages.

The questionnaire applied in this study was developed using Qualtrics software platform. The questions included beverage frequency of consumption, beverage preference (liking), emotional associations and participant characteristics, such as, age, gender and nationality. The first question was regarding consumption, “how often do you consume “beverage”?”, from this point the participants with high or low consumption were asked about beverage liking and the remaining participants (non-consumers), were asked if they had emotional associations with that specific beverage although they were not regular consumers. Following, the consumers with high and low frequency of consumption, along with the no consumers that claimed they had emotional associations, were asked about the emotions they felt during the consumption of the beverage (Appendix 1).

The 25 emotions assessed in the survey were based on a previous study, where emotions related with wine, beer and NAB were collected through a focus group methodology that included 56 Portuguese and Dutch consumers (Silva, Jager, van Bommel, van Zyl, Voss, Hogg, Pintado & Graaf, 2016a). The emotions used were classified according to their valence, meaning from the 25 emotions used 76% were positive, 16% were negative and 8% were neutral.

The questionnaire was first written in English (Appendix 2) and then translated to the native languages, Portuguese and Dutch. Data were collected between March and May 2016. It was aimed to have a similar number of participants per country, however, the number of responses differed between countries. In Portugal the amount of responses was 689 with a completion rate of 62%, being 427 completed. In the Netherlands 1139 was the total of responses obtained with a completion rate of 62%, meaning 708 were completed.

### 2.2. Participants

The inclusion criteria to participate in this study were: being Portuguese or Dutch, age between 18 to 65 years old, healthy (self-reported) and consume at least one of the seven beverages in study.

The 1135 participants that completed the surveys, were recruited from the general population through social media, although using different channels. For PT personal contacts, Facebook and Linked in were used and for NL it was used Facebook, Twitter aligned with the Wageningen University website and their data base contacts. Before starting the survey participants were informed about the research goal and the data collection purpose, through the information brochure (Appendix 3), as well as through an introduction paragraph at the beginning of the survey. After the survey completion a symbolic monetary reward of 25€ was attributed to two randomly selected participants from each country to thank for their participation.

The participants' characterization can be found in the table 2. Only participants who provided the complete information were included in the sample. Both populations were divided into two age ranges 18–35 years and 36-65 years.

Table 2. Participants' characterization.

	Age group	Gender				Total	
		Male		Female			
NL consumers (n= 449 out of 708)	18 – 35	54	12%	243	54%	297	66%
	36 – 65	52	12%	100	22%	152	34%
	Total	106	24%	343	76%	449	100%
PT consumers (n=423 out of 427)	18 – 35	64	15%	199	47%	263	62%
	36 – 65	69	16%	91	22%	160	38%
	Total	133	31%	290	69%	423	100%

### 2.3. Data analysis

The analysis was performed using the software SPSS (IBM SPSS Statistics, version 21). The independent variables in study were participants' individual characteristics, such as gender, age and nationality. The respective frequencies were analyzed along with the dependent variables, frequency of consumption, liking and emotional associations. The dependent variables, frequency of consumption and liking were continuous, although for statistical purposes the scales used were shortened from nine-points into three categories. For the frequency of consumption it was then analyzed high, low and no consumption and for liking like, neither and dislike.

The analysis of emotions was based on the frequencies obtained with the question that assessed how consumers felt during the beverage consumption. The question had a seven-point scale further shortened into three categories: felt more, felt less and non-applicable. First the emotions were analyzed regarding their applicability to the beverage consumption. It was considered non-applicable emotions whose frequencies were 55% bigger than applicable emotions (felt more and felt less summed up). Second, was defined an emotion profile with the applicable emotions to the beverage consumption, obtained by summing the frequencies of both countries for felt more and felt less. The emotions were analyzed in percentage format and afterwards the emotions felt more were organized in a descending order and the emotions felt less in an ascending order. For the cultural comparison purpose all the applicable emotions were individually analyzed using a web chart. To achieve this the frequencies of both countries were proportionally converted and the emotions were organized on the chart by valence, first the positive, then the neutral and at the end the negative emotions.

### 3. Results

An emotion profile per beverage was obtained for the two countries in study, Portugal and the Netherlands, as can be observed on the figure 1. The results showed were produced by summing up all frequencies obtained for all emotions per beverage and per country, within the three levels of classification (felt more, felt less and non-applicable). Afterwards, both data were proportionally treated to obtain percentages, allowing the comparison between countries.

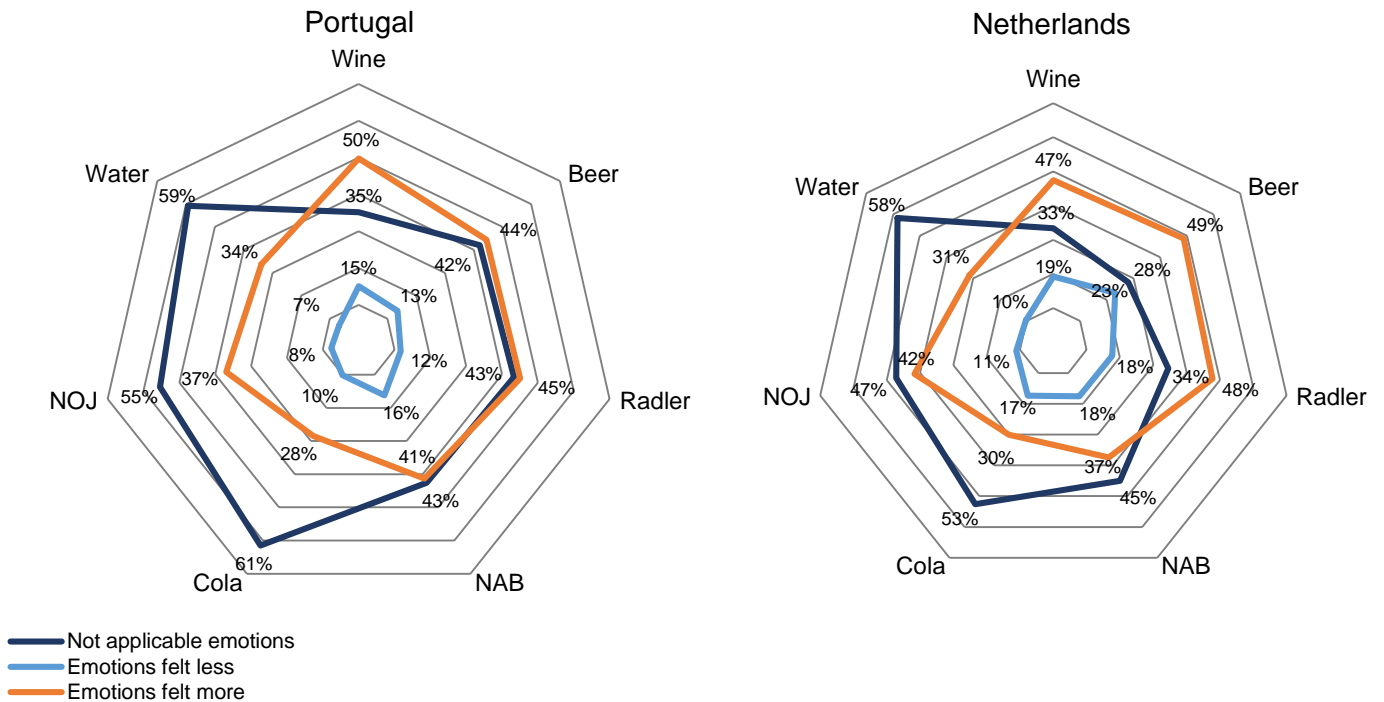


Figure 1. Beverages emotional profile in Portugal and Netherlands.

For the seven beverages consumption higher rates for “emotions felt less” are observed in the NL when compared to PT. Both alcoholic beverages and non-alcoholic beverages showed to promote feeling more emotions, but alcoholic ones more intensely than non-alcoholic. More emotions are felt in PT with wine consumption and in the NL for beer consumption. Radler consumption makes Dutch consumers feel more emotions than Portuguese consumers. NAB showed to promote more emotions in PT than in the NL, the opposite is seen for NOJ, more emotions are felt in the NL than in PT, although the non-alcoholic beverage that in both countries was highly rated for “emotions felt more” is NOJ.

### 3.1. Wine

The participants' characterization for wine is shown in the following table 3. In the NL prevails a low consumption among the youngest age segment (18-35 years old), specially within the female gender. In PT it is observed a high consumption of wine within the male gender among 36-65 years old, while females show to have a low consumption, bigger among 18-35 years old. The frequency of consumption of wine is bigger in PT when compared to the NL, however this beverage is highly liked in both countries.

Table 3. Frequency and liking of wine consumption for Portuguese and Dutch consumers.

NL participants (N= 449)		Age range				Gender			
		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=449)	High	84	19%	79	18%	32	7%	130	29%
	Low	160	36%	48	11%	52	12%	156	35%
	No	54	12%	25	6%	22	5%	57	13%
Liking (n= 446)	Like	191	43%	114	26%	65	15%	239	54%
	Neither	69	15%	22	5%	26	6%	65	15%
	Dislike	35	8%	15	3%	13	3%	37	8%
PT Participants (n= 423)		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=423)	High	73	17%	90	21%	86	20%	77	18%
	Low	96	23%	42	10%	33	8%	104	25%
	No	95	22%	28	7%	15	4%	109	26%
Liking (n= 406)	Like	135	33%	116	29%	109	27%	141	35%
	Neither	67	17%	30	7%	19	5%	78	19%
	Dislike	45	11%	13	3%	4	1%	54	13%

Legend: High consumption: Daily; 3 or more times a week; 1-2 times a week;  
 Low consumption: 2-3 times a month; monthly (1 time per month); occasionally (4-11 times a year);  
 No consumption: very occasionally (1-3 times per year); already tried but I don't drink it; never tried it;  
 Like: like extremely; like very much; like moderately;  
 Neither like or dislike; like slightly; neither like or dislike; dislike slightly;  
 Dislike: dislike moderately; dislike very much; dislike extremely;

From the 25 emotion terms all showed to be applicable to define the wine emotion pattern. The wine emotion pattern in figure 2, shows that drinking wine makes the consumers feel more *amused, happy, relaxed, free, pleased, loving, good, friendly, joyful, exuberant, comforted, adventurous, fulfilled and excited*. On the other hand, makes them feel less *grumpy, sad, disappointed, responsible, restless, rational and conscious*. Wine it is a beverage perceived as a promoter of positive emotions and reliever of negative and neutral emotions.

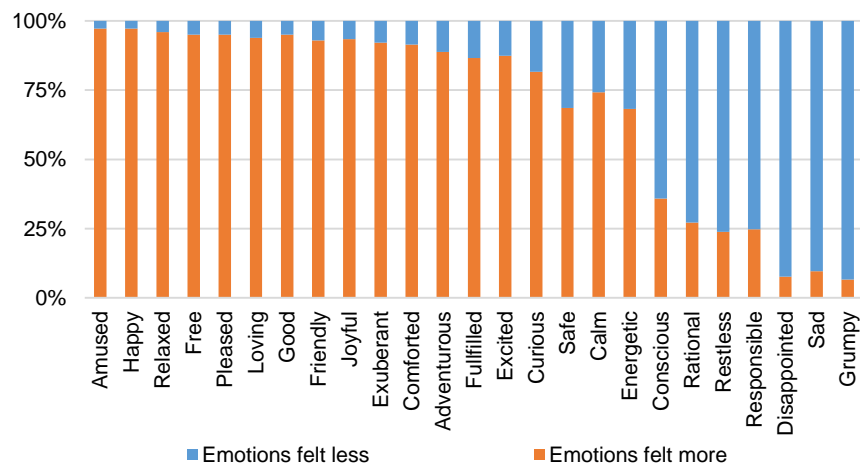


Figure 2. Wine emotion profile.  
 Legend: n= 610 (PT n=229; NL n= 381)

Within the two cultures in study the differences in the emotion profile were considerable (figure 3). It is observed some emotions were considered more felt in PT than in the NL, such as *comforted*, *exuberant*, *friendly*, *happy* and *safe*. While in the NL emotions like *responsible*, *rational* and *grumpy* were mentioned to be felt less, when compared to PT.

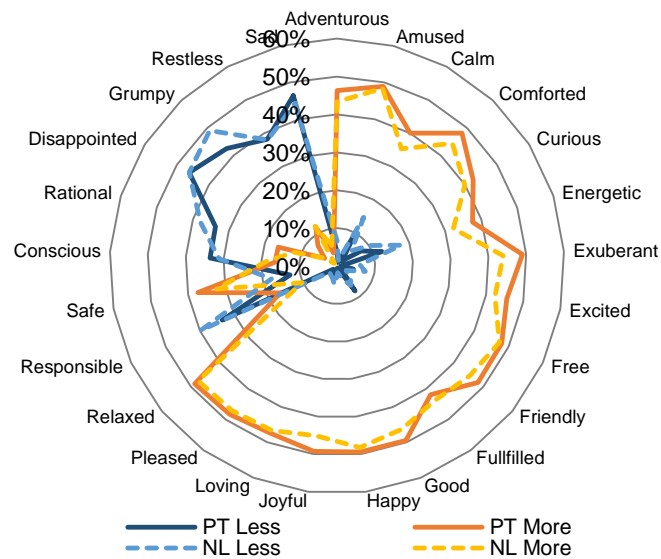


Figure 3. Wine emotion profile for Portuguese and Dutch consumer.  
 Legend: n= 610 (PT n=229; NL n= 381)



### 3.2. Beer

Beer consumers are characterized on the table 4. Beer shows a high frequency of consumption among Dutch consumers, especially among females, although females are also non-consumers. The high frequency of consumption is bigger within the young segment (18-35 years old). These consumers were the ones who also showed to like beer and to dislike it. Meanwhile, in PT it is observed that low frequency consumers and non-consumers of beer are females and 18-35 years old. The high frequency consumers are men and 18-35 years old. Beer is highly liked among all ages and genders.

Table 4. Frequency and liking of beer consumption for Portuguese and Dutch consumers.

NL participants (N= 449)		Age range				Gender			
		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=449)	High	136	30%	44	10%	67	15%	113	25%
	Low	84	19%	37	8%	26	6%	94	21%
	No	78	17%	71	16%	13	3%	136	30%
Liking (n= 435)	Like	156	36%	70	16%	84	19%	141	32%
	Neither	65	15%	30	7%	12	3%	83	19%
	Dislike	67	15%	48	11%	9	2%	106	24%
PT Participants (n= 423)		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=423)	High	65	15%	44	10%	67	16%	43	10%
	Low	93	22%	62	15%	53	12%	102	24%
	No	106	25%	54	13%	16	4%	145	34%
Liking (n= 405)	Like	118	29%	84	21%	96	24%	108	27%
	Neither	60	15%	44	11%	28	7%	75	18%
	Dislike	70	17%	29	7%	8	2%	91	22%

Legend: High consumption: Daily; 3 or more times a week; 1-2 times a week;  
 Low consumption: 2-3 times a month; monthly (1 time per month); occasionally (4-11 times a year);  
 No consumption: very occasionally (1-3 times per year); already tried but I don't drink it; never tried it;  
 Like: like extremely; like very much; like moderately;  
 Neither like or dislike; like slightly; neither like or dislike; dislike slightly;  
 Dislike: dislike moderately; dislike very much; dislike extremely;

The beer emotion profile (figure 4) included all the 25 emotions because they were all considered applicable. The emotion profile is characterized by making feel more: *happy, free, joyful, exuberant, adventurous, pleased, good, excited, friendly, loving, relaxed* and *comforted*. While making feel less: *grumpy, sad, responsible, disappointed, rational, and conscious*. Beer showed to be a beverage promoter of positive emotions and inhibitor of negative and neutral emotions.

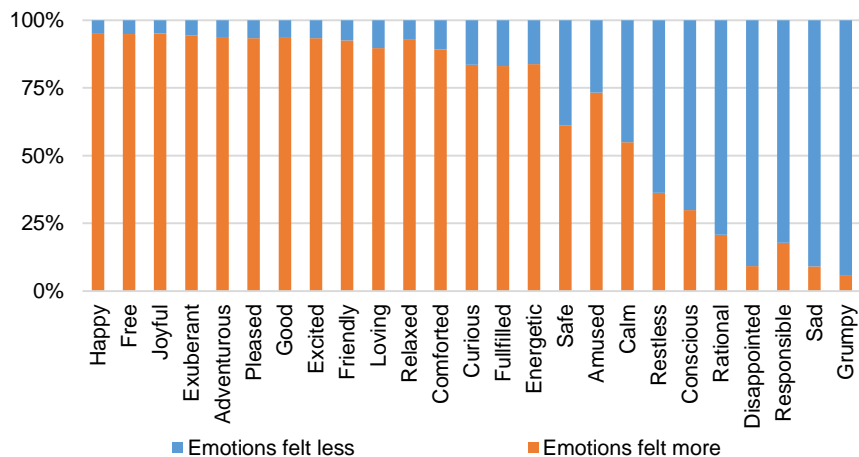


Figure 4. Beer emotion profile.  
 Legend: n= 497 (PT n=193; NL n= 304)

Culturally, differences were found in the emotion profile (figure 5). It is observed that in the NL beer consumption is strongly associated with making feel less negative and neutral emotions when compared to PT, such as *responsible*, *conscious* and *rational*, while in PT *restless* is the emotion that sticks out. Both countries agree as felt less *disappointed*, *grumpy* and *sad*. PT connects strongly positive emotions, which is not seen for the NL, such as: *amused*, *energetic*, *excited*, *friendly* and *safe*. For instances *calm* is an emotion felt more in PT, but in the threshold of being considered felt less in the NL.

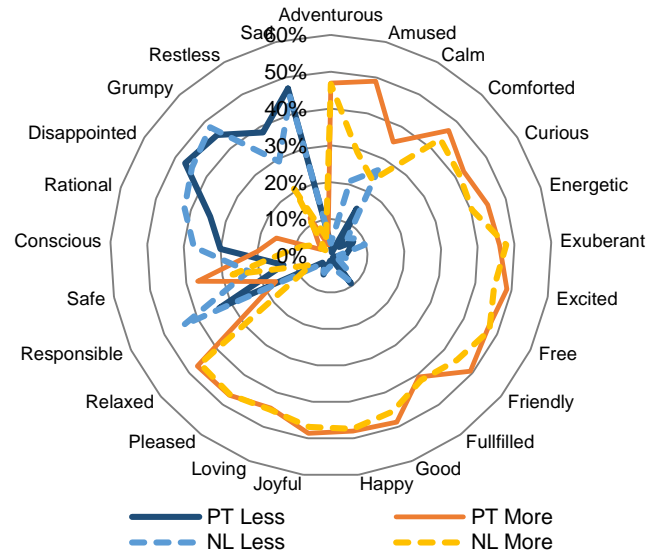


Figure 5. Beer emotion profile for Portuguese and Dutch consumer.  
 Legend: n= 497 (PT n=193; NL n= 304)

### 3.3. Radler

Radler participant's characterization can be found on table 5. In the Dutch sample was found a low consumption and no consumption of radler. The low frequency consumers were mainly females and consumers with 18-35 years old. The same pattern was observed for the non-consumers. This beverage was highly liked especially among females and 18-35 years old. In PT the sample was mainly constituted by non-consumers, that were females and from the youngest segment in study, whom also said they neither like nor dislike the beverage.

Table 5. Frequency and liking of radler consumption for Portuguese and Dutch consumers.

NL participants (N= 449)		Age range				Gender			
		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=449)	High	9	2%	4	1%	6	1%	7	2%
	Low	146	32%	35	8%	42	9%	138	31%
	No	143	32%	113	25%	58	13%	198	44%
Liking (n= 362)	Like	179	49%	42	12%	54	15%	166	46%
	Neither	65	18%	33	9%	22	6%	76	21%
	Dislike	15	4%	28	8%	17	5%	26	7%
PT Participants (n= 423)		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=423)	High	1	0%	4	1%	2	0%	3	1%
	Low	45	11%	30	7%	30	7%	44	10%
	No	218	51%	126	30%	104	24%	243	57%
Liking (n= 267)	Like	42	16%	41	15%	32	12%	50	19%
	Neither	85	32%	39	15%	40	15%	85	32%
	Dislike	39	15%	21	8%	21	8%	40	15%

Legend: High consumption: Daily; 3 or more times a week; 1-2 times a week;  
 Low consumption: 2-3 times a month; monthly (1 time per month); occasionally (4-11 times a year);  
 No consumption: very occasionally (1-3 times per year); already tried but I don't drink it; never tried it;  
 Like: like extremely; like very much; like moderately;  
 Neither like nor dislike; like slightly; neither like or dislike; dislike slightly;  
 Dislike: dislike moderately; dislike very much; dislike extremely;

To define the radler emotion profile (figure 6), the emotion *safe* was excluded due to being considered non-applicable by the participants. Radler emotion profile showed to promote several positive emotions: *happy, amused, pleased, relaxed, joyful, good, free, friendly, fulfilled, exuberant, comforted* and *excited*. On the other hand makes participants' feel less: *grumpy, sad, disappointed* and *restless*. Strongly positive emotions are associated with radler consumption.

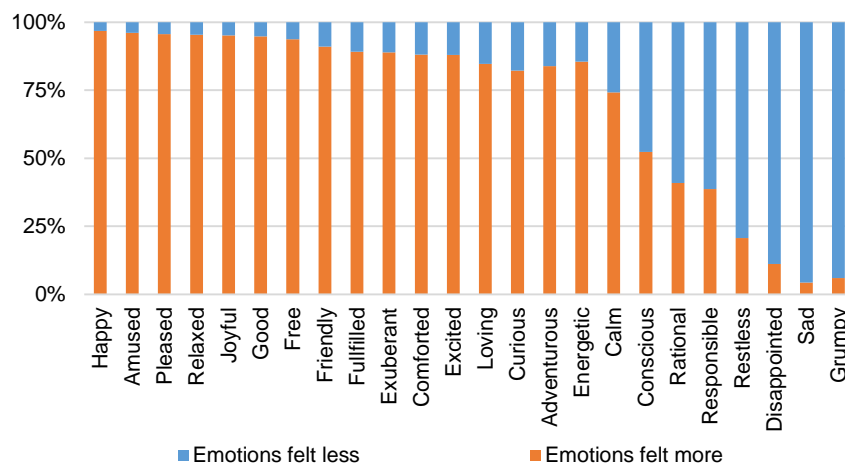


Figure 6. Radler emotion profile.

Legend: n= 268 (PT n=53; NL n= 215)

For radler emotion profile (figure 7) culture showed to promote some major differences especially among neutral and negative emotions. For instances, it can be observed that Dutch consumers consider radler strongly as a negative emotions reliever, when compared to PT, making feel less *grumpy* and *sad*. As well as, less *responsible* and *rational*, which were considered as felt more between Portuguese consumers. *Conscious* was an emotion in the threshold of being considered felt less in NL while considered as felt more in PT. In PT radler consumption was considered to make feel more *calm*, and *excited*.

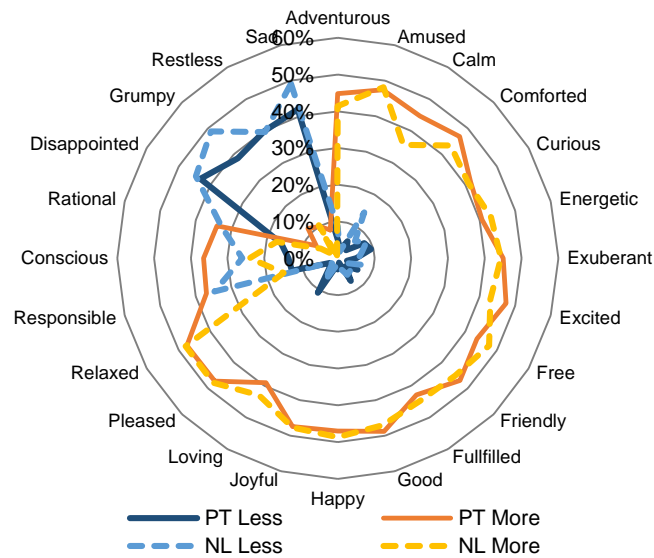


Figure 7. Radler emotion profile for Portuguese and Dutch consumer.  
 Legend: n= 268 (PT n=53; NL n= 215)

### 3.4. NAB

The data collected from both populations showed to be constituted greatly by non-consumers of NAB (table 6). From those, Dutch consumers showed neither like nor dislike NAB and the Portuguese showed the same. Portuguese consumers also showed to dislike NAB, especially females and the youngest age group.

Table 6. Frequency and liking of NAB consumption for Portuguese and Dutch consumers.

NL participants (N= 449)		Age range				Gender			
		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=449)	High	3	1%	5	1%	2	0%	6	1%
	Low	27	6%	25	6%	22	5%	30	7%
	No	268	60%	122	27%	82	18%	307	68%
Liking (n= 317)	Like	38	12%	20	6%	12	4%	46	15%
	Neither	114	36%	56	18%	56	18%	114	36%
	Dislike	48	15%	41	13%	29	9%	60	19%
PT Participants (n= 423)		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=423)	High	2	0%	1	0%	1	0%	2	0%
	Low	6	1%	17	4%	12	3%	11	3%
	No	256	60%	142	33%	123	29%	277	65%
Liking (n= 292)	Like	6	2%	17	6%	11	4%	13	4%
	Neither	69	24%	75	26%	61	21%	82	28%
	Dislike	78	27%	47	16%	42	14%	84	29%

Legend: High consumption: Daily; 3 or more times a week; 1-2 times a week;  
 Low consumption: 2-3 times a month; monthly (1 time per month); occasionally (4-11 times a year);  
 No consumption: very occasionally (1-3 times per year); already tried but I don't drink it; never tried it;  
 Like: like extremely; like very much; like moderately;  
 Neither like or dislike; like slightly; neither like or dislike; dislike slightly;  
 Dislike: dislike moderately; dislike very much; dislike extremely;

The emotions considered non-applicable for NAB consumption were: *loving, grumpy, curious, restless* and *sad*. The NAB emotion profile (figure 8) revealed to be constituted mainly by positive low arousal emotions. The emotions promoted by NAB consumption are *safe, good, relaxed, friendly, responsible, and conscious*. *Disappointed* is on the edge to be considered as felt less.

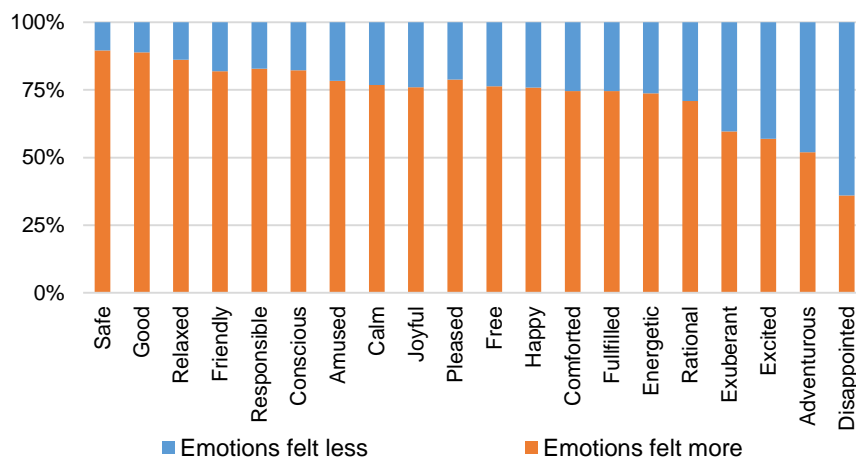


Figure 8. NAB emotion profile.  
 Legend: n= 98 (PT n=22; NL n= 76)

The profiles defined per culture were similar (figure 9). The Portuguese felt more positive high arousal emotions with NAB consumption such as *adventurous*, *comforted*, *exuberant* and *excited*. The opposite was seen for the NL, were more positive low arousal emotions were felt more like *responsible*, *safe*, *conscious* and *rational*. *Excited* in the Dutch population was in the threshold of being felt less.

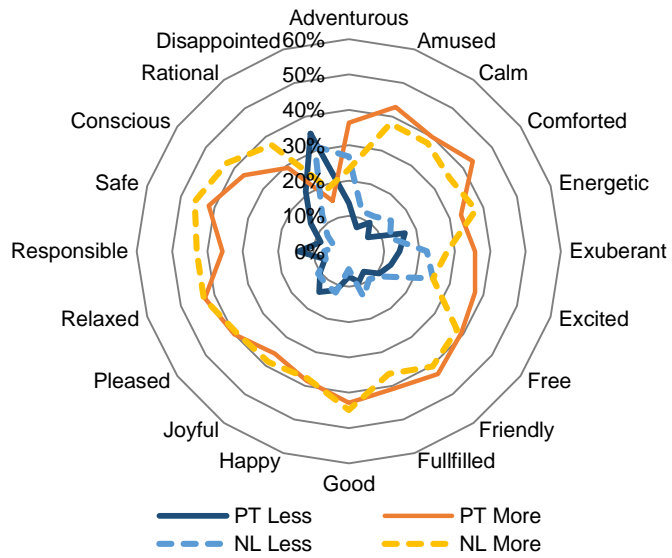


Figure 9. NAB emotion profile for Portuguese and Dutch consumer.  
 Legend: n= 98 (PT n=22; NL n= 76)

### 3.5. Cola

Within the Dutch and the Portuguese sample the same type of consumer was found for cola (table 7). Participants of both samples revealed to have a low frequency of consumption or no consumption at all. The low consumption was higher for females and the age group 18-35 years old. The no consumption was prevalent among females and both age groups. Cola was highly liked, being also mentioned neither like nor dislike.

Table 7. Frequency and liking of cola consumption for Portuguese and Dutch consumers.

NL participants (N= 449)		Age range				Gender			
		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=449)	High	56	12%	24	5%	26	6%	54	12%
	Low	154	34%	43	10%	49	11%	148	33%
	No	88	20%	85	19%	31	7%	141	31%
Liking (n= 435)	Like	168	38%	59	13%	62	14%	165	37%
	Neither	92	21%	53	12%	31	7%	113	25%
	Dislike	38	8%	38	8%	12	3%	64	14%
PT Participants (n= 423)		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=423)	High	57	13%	24	6%	38	9%	43	10%
	Low	130	31%	74	17%	59	14%	145	34%
	No	77	18%	62	15%	39	9%	102	24%
Liking (n= 421)	Like	149	36%	79	19%	79	19%	149	35%
	Neither	71	17%	58	14%	44	10%	87	21%
	Dislike	40	10%	22	5%	12	3%	50	12%

Legend: High consumption: Daily; 3 or more times a week; 1-2 times a week;  
 Low consumption: 2-3 times a month; monthly (1 time per month); occasionally (4-11 times a year);  
 No consumption: very occasionally (1-3 times per year); already tried but I don't drink it; never tried it;  
 Like: like extremely; like very much; like moderately;  
 Neither like or dislike; like slightly; neither like or dislike; dislike slightly;  
 Dislike: dislike moderately; dislike very much; dislike extremely;

Cola emotion profile can be found on figure 10. The emotions found to be non-applicable to describe cola consumption were: *loving, adventurous, safe, curious, conscious, restless, rational, responsible, disappointed, sad* and *grumpy*. Cola consumption makes consumers feel more positive high arousal emotions: *joyful, energetic, amused, happy, excited* and *exuberant*. While making feel less *calm*.

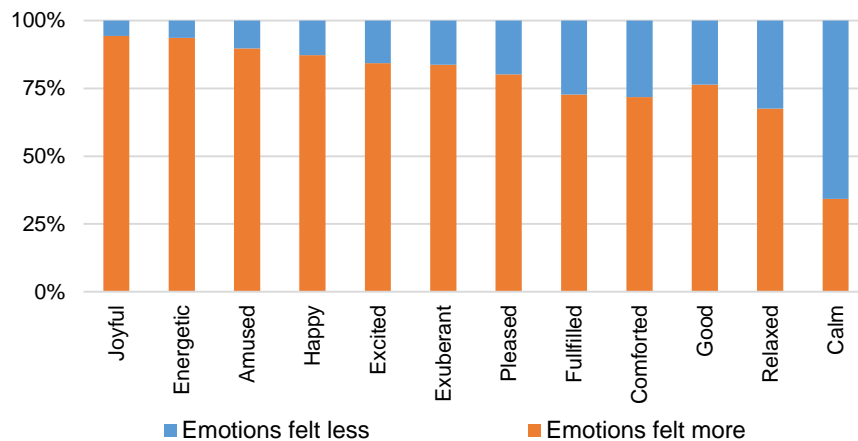


Figure 10. Cola emotion profile.

Legend: n= 493 (PT n=196; NL n= 297)

Culturally, there were differences on the emotion profile (figure 11). Among Portuguese consumers the emotions felt more were strongly mentioned in comparison to the NL. For example, *comforted*, *excited*, *good*, and *pleased*. In the NL *conscious* was considered to be felt less with Cola consumption. *Calm* was an emotion in the threshold in PT, but strongly felt less in the NL.

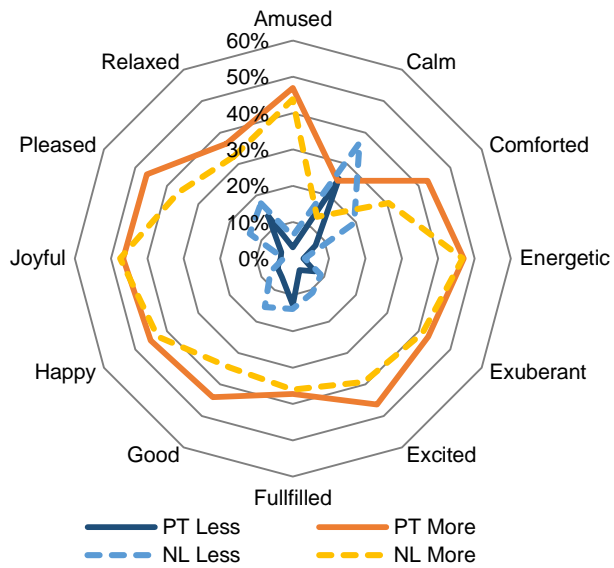


Figure 11. Cola emotion profile for Portuguese and Dutch consumer.  
 Legend: n= 493 (PT n=196; NL n= 297)



### 3.6. NOJ

NOJ consumers were characterized in the table 8. NOJ consumers in both countries showed to be mainly females and 18-35 years old, with a low frequency of consumption. However, the beverage was liked among all ages and genders.

Table 8. Frequency and liking of NOJ consumption for Portuguese and Dutch consumers.

NL participants (N= 449)		Age range				Gender			
		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=449)	High	45	10%	47	10%	20	4%	72	16%
	Low	179	40%	71	16%	52	12%	198	44%
	No	74	16%	34	8%	34	8%	73	16%
Liking (n= 448)	Like	262	58%	134	30%	87	19%	308	69%
	Neither	24	5%	16	4%	18	4%	22	5%
	Dislike	11	2%	2	0%	0	0%	13	3%
PT Participants (n= 423)		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=423)	High	43	10%	34	8%	24	6%	52	12%
	Low	166	39%	96	23%	83	19%	182	43%
	No	55	13%	30	7%	29	7%	56	13%
Liking (n= 423)	Like	233	55%	142	34%	119	28%	258	61%
	Neither	26	6%	15	4%	15	4%	26	6%
	Dislike	5	1%	2	0%	1	0%	6	1%

Legend: High consumption: Daily; 3 or more times a week; 1-2 times a week;  
 Low consumption: 2-3 times a month; monthly (1 time per month); occasionally (4-11 times a year);  
 No consumption: very occasionally (1-3 times per year); already tried but I don't drink it; never tried it;  
 Like: like extremely; like very much; like moderately;  
 Neither like or dislike; like slightly; neither like or dislike; dislike slightly;  
 Dislike: dislike moderately; dislike very much; dislike extremely;

The NOJ emotion profile excluded the following emotions considered non-applicable: *free, loving, friendly, rational, safe, grumpy, amused, exuberant, excited, curious, adventurous, restless, sad and disappointed*. By observing the NOJ emotion profile (figure 12) can be noticed that it is a beverage that greatly promotes only positive emotions, such as, *happy, good, pleased, joyful, fulfilled, energetic, relaxed, comforted, responsible, rational and calm*. Its consumption doesn't make feel less emotions.

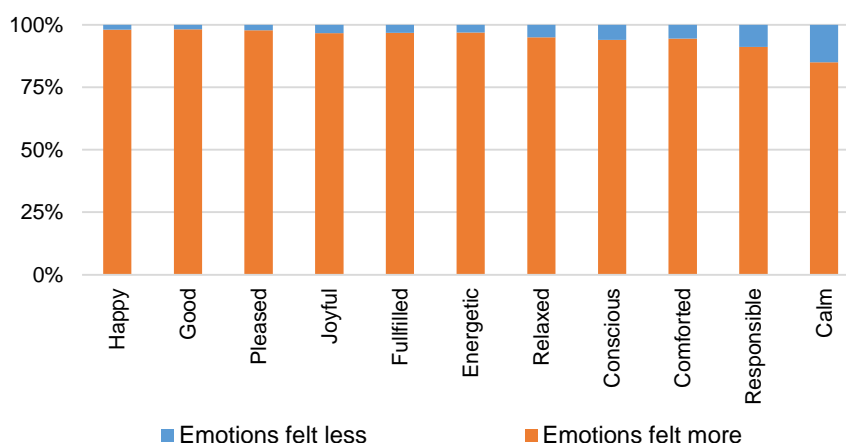


Figure 12. NOJ emotion profile.  
 Legend: n= 622 (PT n=249; NL n= 373)

Culturally, there are slight differences on the NOJ emotion profile (figure 13), specially on the emotion *calm*, that is greater in PT.

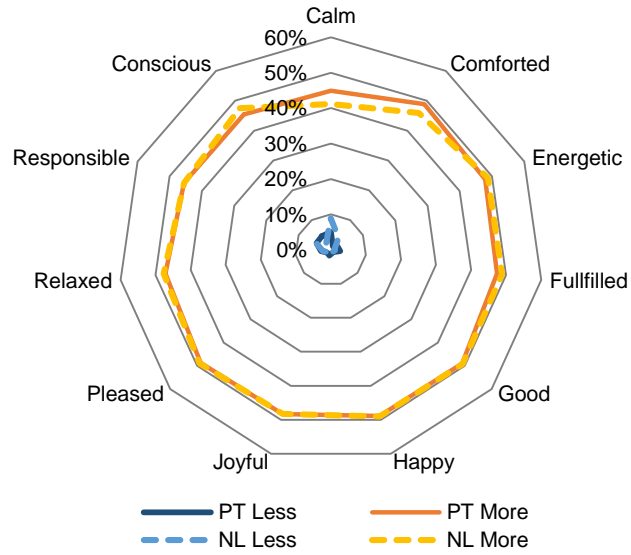


Figure 13. NOJ emotion profile for Portuguese and Dutch consumer.  
 Legend: n= 622 (PT n=249; NL n= 373)

### 3.7. Water

The water consumers are characterized on the table 9. High frequency of consumption is found for both countries among all age groups and genders and high rates for like can be observed. However, in the NL some consumers mention neither like nor dislike water.

Table 9. Frequency and liking of water consumption for Portuguese and Dutch consumers.

NL participants (N= 449)		Age range				Gender			
		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=449)	High	295	66%	148	33%	102	23%	340	76%
	Low	2	0%	4	1%	4	1%	2	0%
	No	1	0%	0	0%	0	0%	1	0%
Liking (n= 449)	Like	178	40%	95	21%	50	11%	223	50%
	Neither	116	26%	56	12%	55	12%	116	26%
	Dislike	4	1%	1	0%	1	0%	4	1%
PT Participants (n= 423)		18 - 35		36 -65		Male		Female	
Frequency of consumption (n=423)	High	263	62%	159	38%	135	32%	289	68%
	Low	0	0%	1	0%	1	0%	0	0%
	No	1	0%	0	0%	0	0%	1	0%
Liking (n= 423)	Like	236	56%	134	32%	116	27%	256	60%
	Neither	25	6%	25	6%	20	5%	30	7%
	Dislike	3	1%	1	0%	0	0%	4	1%

Legend: High consumption: Daily; 3 or more times a week; 1-2 times a week;  
 Low consumption: 2-3 times a month; monthly (1 time per month); occasionally (4-11 times a year);  
 No consumption: very occasionally (1-3 times per year); already tried but I don't drink it; never tried it;  
 Like: like extremely; like very much; like moderately;  
 Neither like or dislike; like slightly; neither like or dislike; dislike slightly;  
 Dislike: dislike moderately; dislike very much; dislike extremely;

Water emotion profile did not include the emotions considered non-applicable by the participants, such as, *adventurous, amused, curious, disappointed, exuberant, excited, free, friendly, grumpy, happy, joyful, loving, restless, sad and safe*. Water showed to be a beverage that only promotes feeling more positive emotions, such as, *conscious, responsible, good, relaxed, calm, pleased, rational, fulfilled, energetic and comforted* (figure 14).

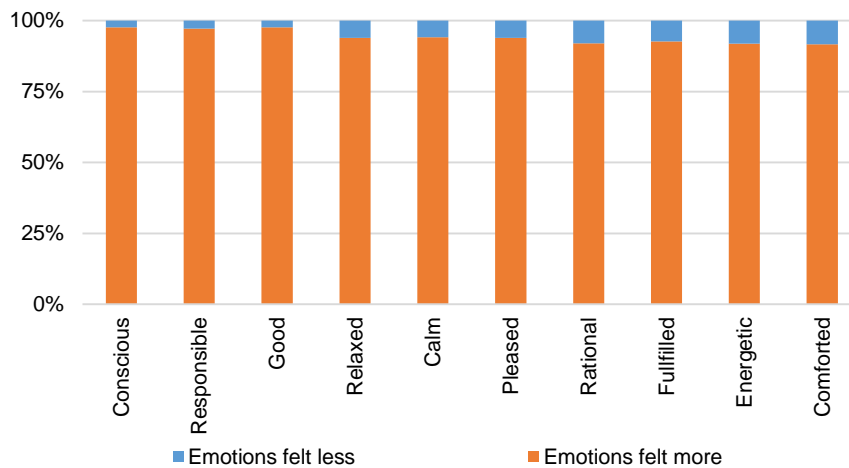


Figure 14. Water emotion profile.  
 Legend: n= 735 (PT n=286; NL n= 449)

The water emotion profile (figure 15) showed slight differences between cultures, PT rated higher rational, *calm* and *comforted*.

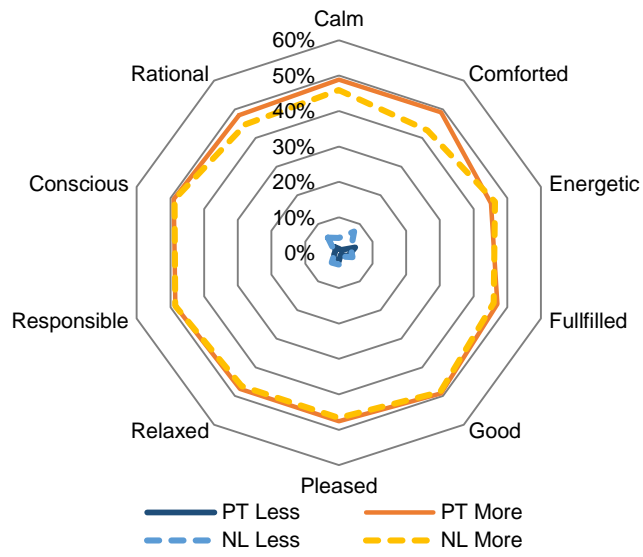


Figure 15. Water emotion profile for Portuguese and Dutch consumer.  
 Legend: n= 735 (PT n=286; NL n= 449)

## 4. Discussion

The main goal of this research was to study emotion associations that different cultures have with seven beverages selected. The broader view of the results obtained in this study indicate that alcoholic beverages evoke more positive high arousal emotions and are used to decrease neutral and negative emotions. This can be explained by the relationship established within advertising between alcohol consumption, fun, and social acceptance (Metzner & Kraus, 2008). On the other hand, low arousal emotions were more intensely mentioned for non-alcoholic beverages, like *calm*, *comforted*, *good pleased*, *relaxed*, *conscious* and *responsible*. *Energetic* was also intensely felt more with non-alcoholic beverages consumption. Healthy beverages as NOJ and Water only increase positive low arousal emotions. Between cultures, the NL feels more intensely less emotions with the consumption of any of the seven beverages.

Emotionally, wine was described as a beverage that promotes positive emotions, but in particular low arousal ones, related with the context of consumption connected with complex meals (Mueller & Jaeger, 2012), or formal occasions, being considered a social facilitator to interact with other people (Pettigrew, 2003; Ritchie, 2007; Thach, 2012). Wine was also associated with the relieving of negative and neutral emotions. Between cultures differences were found, findings point that in the NL wine is perceived more as a reliever being observed a bigger intensity on feeling less *grumpy*, *responsible* and *rational*, while in PT positive emotions are more intensely felt (*exuberant*, *friendly* and *happy*). The eating habits and diverse culinary existent in PT might be the explanation, since the consumption of wine has as main reason its combination with food (Pettigrew & Charters, 2006; Charters & Pettigrew, 2008). Regarding beer, the consumption promotes high arousal emotions, due to the context in which it is usually consumed, informal social events, such as festivals, sports events, night out with friends etc. (Pettigrew & Charters, 2006; McCluskey & Shreay, 2011). When culturally compared, PT showed to feel *amused* more intensely suggesting beer its a beverage consumed only in specific occasions like weekends among friends at pubs, clubs, bars, and restaurants, as it is described that beer sales in PT are mainly in the on-trade (Silva et al, 2015b). While in the NL beer is a daily beverage, drank to achieve relaxation and stating the day of work has ended (Pettigrew, 2003; Pettigrew & Charters, 2006), decreasing more intensely the *conscious*, *rational* and *responsible* feelings. Other contexts are public places or at home with or without company (Silva et al, 2015b), considered a very flexible beverage (Pettigrew & Charters, 2006).

The findings about radler showed that its consumption is done by the youngest segment and from the female gender. Literature describes radler consumption to be bigger among adolescents and young adults (Metzner & Kraus, 2008) and marketing intentions to be focused on attracting female consumers, health and wellness-conscious consumers who want a low calorie option, drinkers who seek to expand their drinking occasions and/ or seek an alternative sweet beer (Alkhatib, 2014). The data collected indicates a higher consumption of radler in the NL, which can be extrapolated to northern countries. Market research shows that the biggest radler market is Germany (Reportlinker, 2013). The radler emotion profile showed that positive emotions are mentioned for the consumption of radler, such as *happy*, *pleased*, and *relaxed* showing a similar profile as wine and beer, suggesting that maybe radler consumption is associated with the same social contexts of consumption. Radler is promoted with a youthfulness image (Leeming, Hanley & Lytle, 2002) and exclusivity (Brain, Parker & Carnwath, 2000), thus explaining associations with *excited*, *exuberant*, *free* and *friendly* emotions. While in the NL radler consumption has a similar pattern as an alcoholic beverage, decreasing negative and neutral emotions, in PT neutral (*conscious*) and positive low arousal emotions (*calm* and *safe*) are felt more. Can be speculated that Portuguese consumers are health and wellness-conscious consumers who want a low calorie option thus having this emotion pattern.

Regarding NAB, *disappointed* was an emotion on the edge to be considered as felt less, indicating that it is still a beverage widely compared with beer (Silva et al, 2015a), but that it is starting to meet the consumers' expectations. Portuguese consumers showed greater willingness to consume the beverage, mentioning feeling more *adventurous*. Dutch consumers mentioned feeling more *responsible*, *conscious* and *rational* with NAB consumption, indicating the beverage is still seen in the NL as an alternative for

alcoholic drinks, when consumers have to drive, have medical concerns or in case of pregnancy (Vlek & Peters, 2012).

Cola consumption is mainly done by the youngest age group. Companies who sell this beverage target the younger generations encouraging the consumption as a habit that prevails even when adults (Hawkes, 2002). The consumption among the younger population has also been influenced by fast food industry by offering menus with lower prices (Mueller & Jaeger, 2012). The beverage is highly liked as expected due to taste preferences (sugar content) and caffeine content (Hattersley, Irwin, King & Allman-Farinelli, 2009). Emotionally, cola is perceived as an *energetic* beverage that reduces feeling *calm*, related with its nutritional profile, as well as *happy* and *exciting*, always associated on cola marketing campaigns (Hawkes, 2002), especially on Coca-Cola company campaigns, such as “open happiness” released in 2009 (D&AD, 2016). Thus, it was expected that *happy* would be strongly highlighted for the cola consumption when compared to the remaining drinks, which was not observed. Between cultures, *conscious* was considered felt less in NL and felt more in PT, suggesting different contexts of consumption. In the NL its consumption might be related with settings in which alcohol is usually consumed and in PT in contexts related with family or friends gatherings or with fast food consumption (Hattersley, Irwin, King & Allman-Farinelli, 2009), being a flexible beverage.

The beverage representing the fruit juices category was NOJ, mainly consumed by females and by the youngest segment in study, however transversely highly liked. Females have more health and weight concerns which can explain being the main consumers, also younger generations are more aware of dietetic patterns importance. Reasons described before to choose juice were: the will to consume one daily fruit serving (Serdula et al., 2004), the taste preference (Drewnowski, 1997) and as an alternative for alcohol or as a beverage for children (Mueller & Jaeger, 2012). NOJ healthy connotation and sweet sensory profile maybe impacted the emotional associations, being described as making feel more *happy, good, pleased, joyful* and *fulfilled*.

Water showed as expected a transversal consumption between genders and group ages. Few consumers mentioned they didn't consumed water which is strange as water is essential, but that could be explained due to a mistake during the question response or due to tiredness of doing the questionnaire. In the NL a considerable percentage of consumers said they didn't “*like nor dislike*” water, which can lead to choosing other options like fruit juices or other types of water such as flavored water, available on the market. Water consumption produces mainly positive low arousal emotions (*responsible, relaxed, good* and *relaxed*) and neutral (*conscious*). The water emotion pattern seems to indicate consumers' knowledge regarding water health and physiological functions.

#### 4.1. Study limitations

Some limitations were found on the current study that produced some bias in the results obtained. The first was due to the questionnaire being a bit long making the participants to drawback and not completing it, producing results that couldn't be used. The second is revealed on the two population samples collected, being remarkable the greater amount of participants in the NL in comparison to PT. Besides, the data collected for the older age group (36-65 years old) was less when compared to the young age group, which might not provide reliable information. In the other hand, in both samples there is clearly more women than men. These factors had an impact in the assessment of cultural differences as well as defining consumer and emotion patterns. The difference in the amount of responses collected per sample might be explained by the usage of different survey distribution channels, being observed less and powerless ones for PT than for NL. Third, the lack of specific information about the seven beverages in study, for instances the type of wine: red, green, rose and white; type of beer and alcoholic content, also applicable in the case of radler; the type of cola: light or regular; type of water: bottled, tap or flavoured. This lack of information might have led to the consumer uncertainty about what emotions assess. The fourth limitation observed was the emotional lexicon used for the study. The emotional lexicon was developed to assess beer, wine and NAB, therefore the emotions where specific for those beverages characterization, however with the application for the remaining beverages it has the potential to bias the results.

## 4.2. Future work

Future work could include an emotional lexicon specifically developed for the group of beverages in study helping to produce a more specific emotion profile per beverage, this aligned with providing information that allows the consumer to differentiate between subtypes of beverages within the same category. Thus future research should further more explore how different subtypes perform differently in terms of emotions produced. Valuable insights for manufacturers may be gained by a more detailed analysis of choice of different types of beverages and future research should also examine to which degree this differentiation is determined by the context.

Another proposal lies in the inclusion of teenagers on the population in study. It would provide more insight regarding the emotion profiles of beverages like radler, NAB and cola, first because it was proved that they are the main consumers, second, on case of radler and NAB, due to their willingness to try new flavour profiles (Reportlinker, 2013) being opened to new innovations. For NAB it is advised future improvement on NAB marketing communication by making associations with energetic and convivial emotions, making the expectations become achievable (Silva et al, 2015a) and avoiding comparisons with beer.

Further work should also include a statistical treatment of the emotion pattern results between cultures for a better understanding of which emotions are significantly relevant.

## 5. Conclusion

In conclusion, this study shows that self-report questionnaires have potential to develop emotion profiles within different beverages categories, indicating as well the need to study each one of them specifically to obtain accurate profiles for the industry use. Generally, the consumption of alcoholic beverages serve the purpose of obtaining relaxation and relieving from negative emotions, while the consumption of non-alcoholic beverages focus more on feeling energized and for healthy beverages, as NOJ and water, to obtain consciously the nutritional benefits since only positive emotions are produced.

On the alcoholic beverages category, wine and beer showed to promote positive emotions felt more intensely by Portuguese consumers, while Dutch feel strongly relieve from negative and neutral emotions. Radler promotes positive emotions, being the high arousal ones associated with its youthfulness image. It is mainly consumed in northern countries such as the NL, where it shows an emotion profile similar to other alcoholic beverages. In PT consumers have a conscious consumption being probably health and weight concerned consumers who consume it as a low caloric option.

For non-alcoholic beverages it is seen that NAB promotes disappointment in both countries being a beverage widely compared with beer, especially in the NL where neutral emotions are mentioned, but Portuguese consumers feel more *adventurous* being keener to consume it. Cola is perceived as an *energetic* beverage related with its nutritional profile, although it was expected happy to be highlighted. Portuguese consumers showed to have a conscious consumption, while Dutch seem to use for its energizing properties.



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## 7. Appendix

### Appendix 1: Emotion lexicon

Portuguese	English	Dutch
AVENTUREIRO(A)	ADVENTUROUS	AVONTUURLIJK
DIVERTIDO(A)	AMUSED	GEAMUSEERD
CALMO(A)	CALM	KALM
CONFORTADO(A)	COMFORTED	BEHAAGLIJK
CONSCIENTE	CONSCIOUS	BEWUST
CURIOSO(A)	CURIOUS	NIEUWSGIERIG
DESILUDIDO(A)	DISAPPOINTED	TELEURGESTELD
ENERGÉTICO(A)	ENERGETIC	ENERGIEK
ANIMADO(A)	EXCITED	OPGEWONDEN
ENTUSIASMADO(A)	EXUBERANT	UITBUNDIG
LIVRE	FREE	VRIJ
AMIGÁVEL	FRIENDLY	VRIENDELIJK
COMPLETO(A)	FULFILLED	VOLDAAN
BEM	GOOD	GOED
MAL DISPOSTO(A)	GRUMPY	CHAGRIJNIG
FELIZ	HAPPY	BLIJ
ALEGRE	JOYFUL	OPGEWEKT
AMOROSO(A)	LOVING	LIEFHEBBEND
AGRADADO(A)	PLEASED	TEVREDEN
RACIONAL	RATIONAL	RATIONEEL
RELAXADO(A)	RELAXED	ONTSPANNEN
RESPONSÁVEL	RESPONSIBLE	VERANTWOORDELIJK
DESASSOSEGADO(A)	RESTLESS	ONRUSTIG
TRISTE	SAD	VERDRIETIG
SEGURO(A)	SAFE	VEILIG

## Appendix 2: Survey (English version)

### Emotional associations with beverages

Q1. This 10 minutes questionnaire is part of a research taking place in the Human Nutrition Division of Wageningen University. It intends to assess the emotional component of seven types of beverages: wine, beer, non-alcoholic beer, cola drinks, radler drinks (mixed beverage of beer with lemon), natural orange juice (freshly made) and water. Every person of 18 years and older is invited to participate, therefore we are grateful if you share the survey link with your friends and family. As an encouragement we will give away two vouchers of 25€. Please note the information provided is totally confidential. If you have any questions don't hesitate to contact us. Thank you in advance for your collaboration!

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Q2. How often do you consume WINE?

- Daily
- 3 or more times a week
- 1-2 times a week
- 2-3 times a month
- Monthly (1 per month)
- Occasionally (4-11 times per year)
- Very occasionally (1-3 times per year)
- Already tried it but I don't drink it
- Never tried it

If Never tried it Is Selected, Then Skip To Q4.

Q3. In general, how much do you like WINE?

- 1- Like Extremely
- 2- Like Very Much
- 3- Like Moderately
- 4- Like Slightly
- 5- Neither Like nor Dislike
- 6- Dislike Slightly
- 7- Dislike Moderately
- 8- Dislike Very Much
- 9- Dislike Extremely

Display if "How often do you consume WINE? 1 time per month (or less) or very occasionally (1-2 times per year) or never tried it" is selected

Q4. Since you only consume WINE very occasionally, do you have any emotional associations (positive or negative) towards it ?

- Yes
- No

If No Is Selected, Then Skip To Q7.

Q5. Imagine a situation in which you are drinking WINE. Using the words below, and without thinking about it, please indicate how having WINE makes you feel (Part 1/2). When I drink WINE I feel..

	Much less	Less	Slightly less	Slightly more	More	Much more	Not applicable
ADVENTUROUS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AMUSED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CALM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
COMFORTED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CONSCIOUS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURIOUS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DISAPPOINTED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENERGETIC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EXCITED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EXUBERANT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FREE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FRIENDLY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6. Continuation (Part 2/2). When I drink WINE I feel..

	Much less	Less	Slightly less	Slightly more	More	Much more	Not applicable
FULFILLED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GOOD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GRUMPY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HAPPY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
JOYFUL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LOVING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PLEASED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RATIONAL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RELAXED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RESPONSIBLE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RESTLESS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAFE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7. How often do you consume BEER?

- Daily
- 3 or more times a week
- 1-2 times a week
- 2-3 times a month
- Monthly (1 per month)
- Occasionally (4-11 times per year)
- Very occasionally (1-3 times per year)
- Already tried it but I don't drink it
- Never tried it

If Never tried it Is Selected, Then Skip To Q9.

Q8. In general, how much do you like BEER?

- 1- Like Extremely
- 2- Like Very Much
- 3- Like Moderately
- 4- Like Slightly
- 5- Neither Like nor Dislike
- 6- Dislike Slightly
- 7- Dislike Moderately
- 8- Dislike Very Much
- 9- Dislike Extremely

Display if "How often do you consume BEER? 1 time per month (or less) or very occasionally (1-2 times per year) or never tried it" is selected

Q9. Since you only consume BEER very occasionally, do you have any emotional associations (positive or negative) towards it ?

- Yes
- No

If No Is Selected, Then Skip To Q12

Q10. Imagine a situation in which you are drinking BEER. Using the words below, and without thinking about it, please indicate how having BEER makes you feel (Part 1/2). When I drink BEER I feel..

Display table on Q5.

Q11. Continuation (Part 2/2). When I drink BEER I feel..

Display table on Q6.

Q12. How often do you consume NON-ALCOHOLIC BEER?

- Daily
- 3 or more times a week
- 1-2 times a week
- 2-3 times a month
- Monthly (1 per month)
- Occasionally (4-11 times per year)
- Very occasionally (1-3 times per year)
- Already tried it but I don't drink it
- Never tried it

If Never tried it Is Selected, Then Skip To Q14.

Q13. In general, how much do you like NON-ALCOHOLIC BEER?

- 1- Like Extremely
- 2- Like Very Much
- 3- Like Moderately
- 4- Like Slightly
- 5- Neither Like nor Dislike
- 6- Dislike Slightly
- 7- Dislike Moderately
- 8- Dislike Very Much
- 9- Dislike Extremely

Display if "How often do you consume NON-ALCOHOLIC BEER? 1 time per month (or less) or very occasionally (1-2 times per year) or never tried it" is selected

Q14. Since you only consume NON-ALCOHOLIC BEER very occasionally, do you have any emotional associations (positive or negative) towards it?

- Yes
- No

If No Is Selected, Then Skip To Q17.

Q15. Imagine a situation in which you are drinking NON-ALCOHOLIC BEER. Using the words below, and without thinking about it, please indicate how having NON-ALCOHOLIC BEER makes you feel (Part 1/2). When I drink NON-ALCOHOLIC BEER I feel..

Display table on Q5.

Q16. Continuation (Part 2/2). When I drink NON-ALCOHOLIC BEER I feel..  
Display table on Q6.

Q17. How often do you consume COLA DRINKS?

- Daily
- 3 or more times a week
- 1-2 times a week
- 2-3 times a month
- Monthly (1 per month)
- Occasionally (4-11 times per year)
- Very occasionally (1-3 times per year)
- Already tried it but I don't drink it
- Never tried it

If Never tried it Is Selected, Then Skip To Q19

Q18. In general, how much do you like COLA DRINKS?

- 1- Like Extremely
- 2- Like Very Much
- 3- Like Moderately
- 4- Like Slightly
- 5- Neither Like nor Dislike
- 6- Dislike Slightly
- 7- Dislike Moderately
- 8- Dislike Very Much
- 9- Dislike Extremely

Display if "How often do you consume COLA DRINKS? 1 time per month (or less) or very occasionally (1-2 times per year) or never tried it" is selected

Q19. Since you only consume COLA DRINKS very occasionally, do you have any emotional associations (positive or negative) towards it?

- Yes
- No

If No Is Selected, Then Skip To Q22.

Q20. Imagine a situation in which you are drinking COLA DRINKS. Using the words below, and without thinking about it, please indicate how having COLA DRINKS makes you feel (Part 1/2). When I drink COLA DRINKS I feel..

Display table on Q5.

Q21. Continuation (Part 2/2). When I drink COLA DRINKS I feel..

Display table on Q6.

Q22. How often do you consume RADLER DRINKS (mixed beverage of beer with lemon)?

- Daily
- 3 or more times a week
- 1-2 times a week
- 2-3 times a month
- Monthly (1 per month)
- Occasionally (4-11 times per year)
- Very occasionally (1-3 times per year)
- Already tried it but I don't drink it
- Never tried it

If Never tried it Is Selected, Then Skip To Q24.



Q23. In general, how much do you like RADLER DRINKS (mixed beverage of beer with lemon)?

- 1- Like Extremely
- 2- Like Very Much
- 3- Like Moderately
- 4- Like Slightly
- 5- Neither Like nor Dislike
- 6- Dislike Slightly
- 7- Dislike Moderately
- 8- Dislike Very Much
- 9- Dislike Extremely

Display if "How often do you consume RADLER? 1 time per month (or less) or very occasionally (1-2 times per year) or never tried it" is selected

Q24. Since you only consume RADLER DRINKS (mixed beverage of beer with lemon) very occasionally, do you have any emotional associations (positive or negative) towards it ?

- Yes
- No

If No Is Selected, Then Skip To Q27.

Q25. Imagine a situation in which you are drinking RADLER DRINKS (mixed beverage of beer with lemon). Using the words below, and without thinking about it, please indicate how having RADLER DRINKS (mixed beverage of beer with lemon) makes you feel (Part 1/2). When I drink RADLER DRINKS (mixed beverage of beer with lemon) I feel..

Display table on Q5.

Q26. Continuation (Part 2/2). When I drink RADLER DRINKS (mixed beverage of beer with lemon) I feel..

Display table on Q6.

Q27. How often do you consume NATURAL ORANGE JUICE (freshly made)?

- Daily
- 3 or more times a week
- 1-2 times a week
- 2-3 times a month
- Monthly (1 per month)
- Occasionally (4-11 times per year)
- Very occasionally (1-3 times per year)
- Already tried it but I don't drink it
- Never tried it

If Never tried it Is Selected, Then Skip To Q29.

Q28. In general, how much do you like NATURAL ORANGE JUICE (freshly made)?

- 1- Like Extremely
- 2- Like Very Much
- 3- Like Moderately
- 4- Like Slightly
- 5- Neither Like nor Dislike
- 6- Dislike Slightly
- 7- Dislike Moderately
- 8- Dislike Very Much
- 9- Dislike Extremely

Display if “How often do you consume NATURAL ORANGE JUICE? 1 time per month (or less) or very occasionally (1-2 times per year) or never tried it” is selected

Q29. Since you only consume NATURAL ORANGE JUICE (freshly made) very occasionally, do you have any emotional associations (positive or negative) towards it?

- Yes
- No

If No Is Selected, Then Skip To Q32.

Q30. Imagine a situation in which you are drinking NATURAL ORANGE JUICE (freshly made). Using the words below, and without thinking about it, please indicate how having NATURAL ORANGE JUICE (freshly made) makes you feel (Part 1/2). When I drink NATURAL ORANGE JUICE (freshly made) I feel..

Display table on Q5.

Q31. Continuation (Part 2/2). When I drink NATURAL ORANGE JUICE (freshly made) I feel..

Display table on Q6.

Q32. How often do you consume WATER?

- Daily
- 3 or more times a week
- 1-2 times a week
- 2-3 times a month
- Monthly (1 per month)
- Occasionally (4-11 times per year)
- Very occasionally (1-3 times per year)
- Already tried it but I don't drink it
- Never tried it

If Never tried it Is Selected, Then Skip To Q34.

Q33. In general, how much do you like WATER?

- 1- Like Extremely
- 2- Like Very Much
- 3- Like Moderately
- 4- Like Slightly
- 5- Neither Like nor Dislike
- 6- Dislike Slightly
- 7- Dislike Moderately
- 8- Dislike Very Much
- 9- Dislike Extremely

Display if “How often do you consume WATER? 1 time per month (or less) or very occasionally (1-2 times per year) or never tried it” is selected

Q34. Since you only consume WATER very occasionally, do you have any emotional associations (positive or negative) towards it?

- Yes
- No

If No Is Selected, Then Skip Q37.

Q35. Imagine a situation in which you are drinking WATER. Using the words below, and without thinking about it, please indicate how having WATER makes you feel (Part 1/2). When I drink WATER I feel..  
Display table on Q5.

Q36. Continuation (Part 2/2). When I drink WATER I feel..  
Display table on Q6.

Q37. Age

Q38. Gender

- Male
- Female

Q39. Nationality

Q40. E-mail (optional, for voucher attribution purpose)

Q41. Thank you very much for your collaboration!



## Emotional associations with beverages | Survey invitation

### Information to the Participants

This survey intend to assess the emotions that different beverages provoke on the participants. The beverages in study are: wine, beer, non-alcoholic beer, cola drinks, radler drinks (mixed beverage of beer with lemon), natural orange juice (freshly made) and water. Those have no connection with any brands.

The survey is part of a research taking place in in the Human Nutrition Division of Wageningen University, being every person above 18 years invited to participate. Therefore we will be grateful if you share the survey link with your friends, family and colleagues.

#### Am I able to participate on the survey?

Our requirements are regarding your age, nationality, health and consumption of at least one of these beverages, although you can still participate if you don't have a regular consumption. If you are Dutch, have between 18 and 65 years old, and consider yourself healthy, you should step forward and be a part of our study.

Be aware that your opinion is extremely important and the information provided by you is totally confidential, being only used for the project purposes. The results will be analysed as whole, not individually.

#### Why should I participate?

Your contribution and experience as a consumer will provide invaluable information for this research regarding different beverages. Also, this is a brief survey that will only take you 10 minutes to finish.

As an encouragement we will giveaway randomly two vouchers of 25€. For this reason we advise you to provide us your e-mail on the survey. The voucher will be given after the survey is over and the contact will be made through e-mail.

#### How can I see my doubts clarified?

If you have any questions or concerns regarding this research, don't hesitate in contacting us on behalf of the research team. See the emails below.

Thank you and kind regards,

Ana Patrícia Silva & Joana Costa  
[emodrinks.studie@wur.nl](mailto:emodrinks.studie@wur.nl)