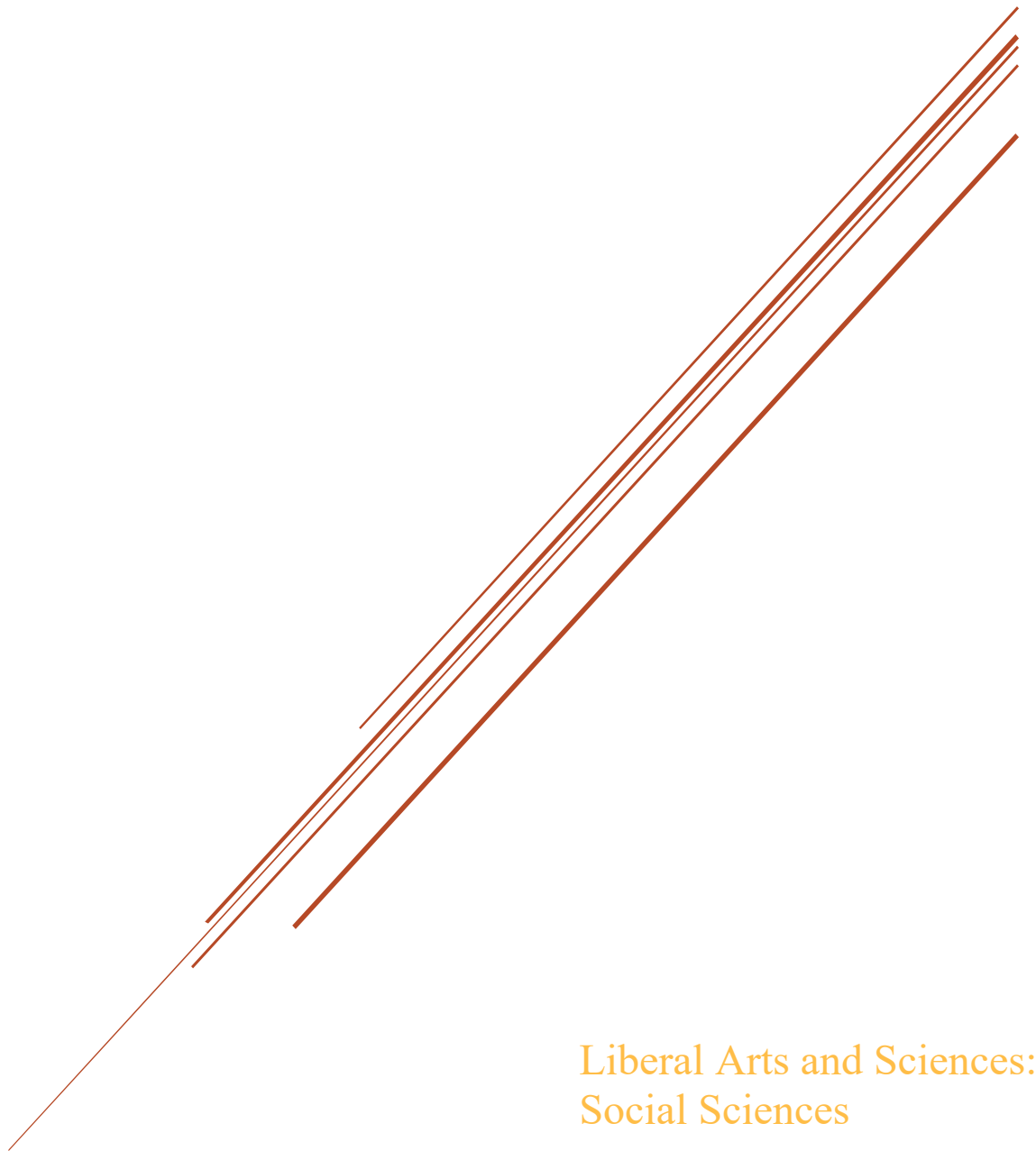


*The impact of non-alcoholic
advertisements on social norms and
alcohol consumption amongst
adolescents*

Anne-Claire Meijer - 2014070



Liberal Arts and Sciences:
Social Sciences

Bachelor thesis Tilburg
University 2019/2020

Introduction

1.1 Alcohol consumption amongst adolescents

In Western societies alcohol consumption among adolescents is high. More than 85% of Dutch 16-year-olds reported in 2009 to have experience with alcohol consumption (Van Dorsselaer, et al., p. 167). Data on weekly drinking in European countries presented the regularity of alcohol consumption in a more widespread report. Across all European countries, 29% of 15-year-olds report regular drinking. The geographical differences are substantial in this HBSC study from 2004 (Currie, et al.), weekly rates for 15-year-olds are over 50% in England, The Netherlands and Wales, but are under 17% in Finland, France, Latvia and Portugal. On average, adolescents start drinking at the age of 12 ½. Considering the dangers of alcohol consumption on young brains (Tapert, Caldwell, & Burke, 2004/2005), this average young age is very concerning. Heavy drinking has been shown to affect the neuropsychological performance, e.g., memory functions of young people and may impair the growth and integrity of certain brain structures. Furthermore, alcohol consumption during adolescence may alter measures of brain functioning, such as blood flow in certain brain regions and electrical brain activities (Alcohol and the Adolescent Brain; Human Studies, 2004/2005).

Most adolescents consume alcohol on Friday and Saturday evenings, usually because young people go out and do not have any study responsibilities the next day (Kuntsche & Gmel, 2013). The consumption talked about here is often consumption that happens in larger groups and in large quantities of drinks. People that consume a high number of alcoholic beverages on single occasions fall under the term; risky single occasion drinkers (RSOD). A high number of RSOD cases amongst adolescents implies that adolescents consume alcohol only on certain occasions. What is not shown in existing studies is the underlying social factors that influence the behaviors of adolescents in said occasions. These underlying factors are important to investigate. When we know what makes adolescents consume alcohol, we might be able to encourage the discontinuation of this dangerous behavior. In an attempt to get a better understanding on these underlying factors we will be investigating the factor of social norm and its influence on alcohol consumption amongst adolescents.

1.2 The role of advertising

Advertising has become part of everyday life and the contemporary person is subjected to hundreds of advertising messages on a daily basis (Skorupa, 2014). Mass media, alcohol advertising in particular, has been shown to influence the alcohol related attitudes and behaviours of adolescents (Anderson et al., 2009). Various cross-sectional studies have examined the effects of alcohol advertising on young people's alcohol awareness, attitudes, intentions and drinking behaviours (Jones & Magee, 2011). Most of these studies have focused on television and/or magazine advertising and have consistently demonstrated that young people are heavily exposed to alcohol advertising (e.g. Jernigan et al., 2005; Center on Alcohol Marketing and Youth, 2010; Garfield & Chung, 2003). Furthermore, exposure to alcohol advertising has been linked with drinking intentions and behaviors (Austin & Knaus, 2000; Chen, Grube, & Bersamin, 2005). A longitudinal study done by Anderson et al. (2009) indicated that alcohol advertising leads to increased alcohol consumption in young people. What has not been researched yet is the recent rise in advertisements of non-alcoholic beverages, e.g. alcohol free beer and spirits, and its possible influence on non-alcoholic beverage consumption. There has been a growing trend of low and non-alcoholic beverage consumption according to the International Wines and Spirits Record (IWSR, 2019). Whether or not this rise in non-alcoholic beverage consumption has something to

do with the growing trend of non-alcoholic advertisements is yet to be explored. This current research will participate in this exploration.

1.3 Cultural background of alcohol consumption

It seems that alcohol use is ingrained in our society. In an interview with National Geographic (2016) archaeologist Patrick McGovern said that alcohol, or fermented beverages, spurred the beginnings of civilization. He described alcohol as an important social lubricant. In early civilizations fermented beverages were used to bring people together. In today's Western culture we tend to think of alcoholic beverage consumption as a recreational activity. McGovern states that alcohol as probably always been used as a way to break down boundaries between people. This is still a very big part of the culture surrounding today's alcohol consumption. More often than not alcohol is offered at social gatherings, like parties, to get people to loosen up and join the 'fun' (Van der Ven, 2011). About 80% of young people's total alcohol consumption is consumed in public drinking places during the weekend (Oostveen, Knibbe, & de Vries, 1996). It is true that the mind-altering properties of alcoholic beverages can lower inhibitions (National Geographic, 2016), which some people think is a benefit of alcohol consumption. However, you can only be aware of these 'benefits' if you have had alcohol before. When it comes to first time-drinkers, social pressure seems to contribute to the act of alcohol consumption (Oostveen, Knibbe, & De Vries, 1996).

1.4 Peer pressure

Direct pressure is a situational social influence and can be exerted either outside drinking situations or in the actual drinking situation (Oostveen, Knibbe, & De Vries, 1996). Peer pressure, a form of direct pressure, is the direct influence on people by peers. Being peer pressured can result in individuals changing their attitudes, values and behaviors to conform to those of the influencing group (Santee & Maslach, 1982). When applied to alcohol consumption, social influence can be described as a set of external environmental pressures influencing individual behavior and attitudes towards alcohol consumption. Behavior in a social setting, for example at parties, is for the most part influenced by situational social factors. Two examples of such social factors are the desire to conform to the peer group present and the desire to expand one's social network. Another situational social factor that can be of social influence is direct pressure, exerted either outside or inside drinking situations (Borsari & Carey, 2001). Direct pressure can come from parents and/or peers. An example of direct pressure at parties is the pressure to drink alcohol in order to be allowed to join group activities, e.g. drinking games. An essential part of drinking games is the encouragement to consume alcohol when failing or passing a certain game element, e.g. throwing a ball in a cup full of beer in Beer Pong and not wanting to perform risky dares in Truth or Dare. Because of the desire to be a part of the peer-group, individuals are more likely to actually consume alcoholic beverages at parties (Santee & Maslach, 1982).

1.5 Social norm and the theory of planned behavior

In the context of parties and social gatherings, social influence and social pressure are determined by the existing circumstantial social norm. Social norms are attributes of groups that generate expectations for the behavior of group members (Prentice, 1991). Social norms are most commonly known as unwritten rules about how to behave. At parties and other social gatherings, the existing social norm is mostly positive towards alcohol consumption. Social norms can shape the way we think and act. Research shows that 25% of the variance of alcohol usage was explained by social norms of family and peers (Oostveen, et al., 1996). This means that if the important people in your life are positive towards alcohol consumption, chances are higher you as an individual will also be positive towards alcohol consumption and as a result will likely have a higher consumption level.

Many theories suggest that human behavior is influenced by social norms. A theory used frequently by social scientists that involves social norms is the theory of planned behavior by Ajzen and Fishbein (1980). According to their theory, behavior is determined by behavioral intention. Behavioral intention is the intention to behave a certain way. Intention does not automatically parallel with displayed behavior. The relationship between behavioral intention and displayed behavior can be subject to additional factors like, social networks, cultural differences, peer pressure and social norms. Ajzen identified three variables that can influence intention. The three variables are attitudes towards certain behavior, subjective norms and perceived behavioral control (PBC). These variables are responsible for behavioral intention, whether simultaneously or as standalone variables, depending on the situation. In chapter two, the theory section of this paper, definitions of the aforementioned terms will be given, and the theory of planned behavior will be further elaborated on.

1.6 Decrease in alcohol consumption

In recent years there is growing evidence for a decline in adolescent alcohol use in the Western world. This change in alcohol consumption has been subjected to scientific debate. Some research suggests that there has been a change in the social position of alcohol (Kraus, et al., 2019) and that this could be because of a social reaction to the negative effects of alcohol. The decline in alcohol consumption could also be due to changes in technology, social norms, family relationships as well as newer trends in health, fitness, wellbeing and lifestyle behavior (2019). As a result of the interplay of these factors, alcohol use has been ‘devaluated’ and is perceived as less desirable by the general public. The desirability of behavior is highly influenced by the social norm in the environment of said behavior. A change in social norm can result in a change of behavior. As for the reason of decreasing alcohol consumption, researchers have yet to narrow down the main reason for this phenomenon. That being said, an interaction of several factors is likely to be the cause for decreasing alcohol consumption (Osterberg, Room, Ramstedt, & Rehm, 2009). This research paper will focus on the influence of social norms on alcohol consumption and its decay and growth.

1.7 This study

Given the decline in alcohol consumption, additional research is needed to understand and predict the trend of alcohol consumption in the future. A more recent trend in wellbeing and lifestyle behavior has led to the development of alcohol-free drinks. In recent years alcohol free options of popular drinks have gained popularity in the mainstream consumer market. The growing market share is accompanied by an increase in positive advertisements and public knowledge regarding the downsides of alcohol usage. Previous studies have shown that media exposure helps influence social norms related to alcohol. This is done through advertising, product placement, in a wide range of entertainment sources, including movies, television, social media and other platforms (Sudhinaraset, Wigglesworth, & Takeuchi, 2016). Whether alcohol advertisements directly result in an increase or decrease in consumption has been the topic of many public policy debates and alcohol and consumer research.

The aforementioned topics will be examined in this paper. However, the focus of this study is on the effects of non-alcoholic advertisements on alcohol consumption with a mediating effect of social norms. In this research, the interest lies in the interaction between the increase of non-alcoholic advertisements and the decrease of the positive social norm towards alcohol consumption, which consecutively can lead to a decrease of alcohol consumption. The research question for this study is the following:

Will non-alcoholic advertisements lead to a decrease of the positive social norm towards alcohol consumption, which in turn results in decreasing alcohol consumption?



Figure 1. Research model

1.8 Research Questions

What are non-alcoholic advertisements?

What are social norms?

Do non-alcoholic advertisements change social norms?

What is alcohol consumption amongst adolescents?

Do social norms affect alcohol consumption?

2 Theory

This second chapter will examine previous research studies and literature of the topics of non-alcoholic advertisements, social norm, and alcohol consumption. Additional background information is given in order to provide appropriate theory behind this studies' research questions. This theory chapter will lay the groundwork for a coherent and intersected theory, which will then serve as the foundation for the research performed in this bachelor thesis.

2.1 Alcohol and youth

Alcohol consumption has been identified as an important risk factor for illness, disability, and mortality several times (Rehm & Parry, 2009; Parry et al., 2009). Alcohol consumption amongst youth specifically is even identified as a major global health concern. Globally, alcohol consumption has caused 7% of deaths and disability among young people aged 10–24 years in 2004 (World Health Organization, 2008). Unfortunately, 2004 is the most recent year for which estimates are available. However, since 2004 other studies have further established that excessive alcohol consumption is unfavorable and can heavily influence health, behaviors and brain development, especially for children and adolescents. One of the studies that has focused on alcohol and brain development for children and adolescents is the 2008 study done by Clark, Thatcher and Tapert. Clark et al. have found that drinking is more harmful to teens than adults because their brains are still developing throughout adolescence and well into young adulthood. Alcohol consumption during this critical growth period could lead to lifelong damage in brain function, particularly the brain areas related to memory, motor skills and coordination (Clark, Thatcher, & Tapert, 2008).

When researchers speak about the dangers connected to alcohol consumption, they are not referring to the consumption of one single beer. Researchers concerned with underage drinking look at consumption levels that fall into the category of binge drinking. Binge drinking is defined worldwide as the consumption of 4 or more drinks, for girls, and 5 or more drinks for boys per drinking occasion (Jacobus, Squeglia, Bava, & Tapert, 2013). Binge drinking may seem like an extreme term, but it has attracted increasing attention from the media and from neuroscientists over the years and has been used to describe dangerous alcohol consumption by several researchers (Jacobus et al., 2013; Courtney & Polich, 2009). The type of drinking described by the term binge drinking is the type that is associated with alcohol poisoning, unintentional injuries, suicide, sexually transmitted diseases, brain damage and many other disorders (Courtney & Polich, 2009). Unfortunately, binge drinking is relatively common and has many social costs in addition to personal costs, e.g. health issues (National Institute on Alcohol Abuse and Alcoholism, 2004). An example of the social costs of excessive alcohol consumption is drunk driving. In drunk driving incidents, it is not just the individual who drank too much alcohol that is at risk. It is a risk for everyone in their environment; other road users, passengers and ambulance crew that have to risk their lives to take care of the aftermath of a drunk driving accident are all put at risk by drunk drivers.

Because of the dangers associated with alcohol consumption, it should be a national objective to prevent underage excessive drinking as much as possible. A relatively simple way we can discourage adolescents to consume alcoholic beverages, is by advertising alternative options like non-alcoholic versions of popular products, e.g. non-alcoholic beers and non-distilled spirits. This will be discussed more in depth in the upcoming paragraphs. By increasing the promotion of non-alcoholic versions of popular beverages the modification of the bigger issue surrounding alcohol consumption, namely the positive social norm towards alcohol consumption, can be set in motion. Altering an existing social norm is not easy to do and takes a lot of time and effort. In this study

we hope to find out whether or not advertisements for non-alcohol products, can help modify the existing positive social norm surrounding alcohol consumption.

2.2 Advertisements and Alcohol advertisements

Advertising has become part of everyday life and the contemporary person is subjected to hundreds of advertising messages on a daily basis (Skorupa, 2014). Alcohol advertisers spent almost 2 billion euros on alcohol advertising in measured media, television, radio, print, outdoor and major newspapers, in 2005 (Alcohol Advertising and Youth, 2007). A study of alcohol advertising in magazines from 1997 to 2001 found that the number of beer and distilled spirits ads tended to increase with a magazine's youth readership. For every 1 million underage readers ages 12-19 in a magazine, researchers found 1.6 times more beer advertisements and 1.3 times more distilled spirits advertisements (Garfield, Chung, & Rathouz, 2003).

Reasons behind advertising

Companies use advertisements mostly to raise awareness for their products. Awareness is desirable for a few reasons; it helps companies to extend their reach, increase their sales and to positively influence brand perception. People perhaps are aware of your company or product, but do not necessarily have a positive perception of the brand. To counter possible inaccurate brand perception, it can be helpful to invest in advertising (Kirmani, 1990).

However, the main reason companies advertise their products is so it can extend the reach of their brand. By reaching new audiences, advertisements can build a demand for the brand, products or service. These audiences are already existing and only need to be reached. The easiest way to do this is by using targeted advertisements. Targeted advertising is a form of online advertising that focuses on the specific traits, interests, and preferences of a consumer (Lambrecht & Tucker, 2013). Advertisers discover this information by tracking your activity on the Internet. They then use this information to alter advertisements to the preference of the consumer, in order to get more sales. Several studies have shown that alcohol advertising specifically targeted at youths have increased alcohol consumption (Anderson, et al., 2009, Garfield & Chung, 2003, Jones & Magee, 2011). This increased alcohol consumption in turn leads to an increase in sales of alcoholic beverages. In 1999, the advertising-to-sales ratio for the alcohol industry was about 9%, in comparison with the average industry advertising-to-sales ratio, which was about 3% (Advertising Age, 1999). This means that 9% of sales for most alcohol companies were generated by advertisements. In 2012 in the United States the advertising-to-sales ratio even grew as big as 14.3 % (Statista Research Department, 2015).

Advertisement design

A study on the responses of young people to alcohol advertising done in 2005 by Chen, Grube, Bersamin, Waiters and Keefe found that underage youth, aged between 10 and 17, are drawn to music, animal and people characters, story and humor in alcohol advertising. Ads that were liked by youth in the study were more likely to elicit responses from youth saying they wanted to purchase the brand and products advertised. The three most popular alcohol ads among youth in the study done by Chen et al. (2005), used animal characters as the leading actors. In addition to animals as the leading actor, celebrities were very popular as leading actors in advertisements. Advertisements featuring celebrities were rated significantly more interesting, effective, and important, and stronger than those with noncelebrity endorsers which was also previously established by Atkin and Block in their 1983 study. Studies of gender differences in youths' perceptions of alcohol advertising have shown that females are more attracted to image of lifestyle advertisements and males are attracted to advertisements that feature sports (Covell, 1992; Waiters, Treno, & Grube, 2001).

In general, studies found that children of all ages enjoy watching humorous commercials for alcoholic beverages (Aitken, 1989, Waiters, Treno, & Grube, 2001). Understanding what aspects of alcohol advertisements appeal to adolescents and whether these aspects are associated with advertising effectiveness is key when it comes to designing an advertisement. Advertising effectiveness in this sense is measured in increasing sales. If the ad is effective, sales will increase for the product being advertised. Knowing what kind of aspects of alcohol advertisements are effective on adolescents can be used to further appeal to the chosen target audience.

Non-alcoholic advertisements

The knowledge on what youths like in advertisements can help design future interventions to counter the influence of alcohol advertising on young people, and as a result could lead to a decrease in alcohol consumption. However, most current non-alcoholic advertisements are not yet catered to fit adolescents' desires and do not use most of the design techniques mentioned before. This is not to say that the currently used advertisements are not effective but it could be an interesting additional feature of the non-alcoholic advertisements that are currently being used. If advertisers could use the beforementioned desirable aspects of alcohol advertisements for non-alcoholic beverages, the non-alcoholic advertisements might be able to influence the desirability of non-alcoholic beverages for youths. By increasing the desirability of non-alcoholic drinks amongst adolescents, it can turn into a norm that is considered appropriate for youths. Making it appropriate behavior to consume less alcoholic beverages could even result in a negative influence on the current positive social norm towards alcohol consumption. In the 1996 study done by Miller and Prentice they explain how social norms are constructed and how repeated exposure to appropriate behavior can indeed influence the development of existing and new social norms. The hypothesis attached to this relationship will be presented right now:

Hypothesis 1: An increase of non-alcoholic advertisements will lead to a decrease of the current positive social norm towards alcohol consumption.

We will go more into depth on social norm theories later. However, it is important to keep the possible relationship between an increase in non-alcoholic advertisements and a decrease in positive social norm towards alcohol consumption in mind while we move on to describe alcohol consumption.

Advertisements and consumption

It is probable that mere exposure to advertisements can have a positive influence of the attitude towards the consumption of the product (Anderson, de Bruijn, & Angus, 2009). The more you see an advertisement for a specific product, the more you will develop a positive attitude towards purchasing the product being advertised. Whether this advertisement is a particular well done ad or not does not matter as much as the frequency it is displayed to the audience. This is also known as the mere-exposure effect. This effect suggests that we tend to like things more when they are familiar to us (Hansen & Wänke, 2009). This could also explain the found effect of age on the positive relationship between alcohol advertisements and advertisement effectiveness. The found effect of age was presented by Covell who suggested that alcohol advertisements become increasingly salient and attractive as youths develop from pre-teens to teenagers (1992). In the 1992 study the pre-teen category consisted of children aged between 8 and 13 and teenagers were categorised as such when aged between 14 and 16. It will be interesting to see whether or not age has a significant influence on the relationship studied in our current research.

Young people with more positive affective responses to alcohol advertising hold more favourable drinking expectancies, perceive greater social approval for drinking, believe drinking is more common among peers and adults, and intend to drink more as adults (Chen & Grube, 2002).

Various cross-sectional studies have examined the effects of alcohol advertising on young people's alcohol awareness, attitudes, intentions and drinking behaviours (Jones & Magee, 2011). Most of these studies have focused on television and/or magazine advertising; these studies have consistently demonstrated that young people are heavily exposed to alcohol advertising (e.g. Jernigan *et al.*, 2005; Center on Alcohol Marketing and Youth, 2010; Garfield & Chung, 2003). Furthermore, exposure to alcohol advertising has been positively linked with drinking intentions and behaviours (Austin & Knaus, 2000; Chen, Grube, & Bersamin, 2005). More recently a longitudinal study done by Anderson *et al.* (2009) indicated that alcohol advertising leads to increased alcohol consumption in young people. In our current study we are interested in studying the relationship that goes the other way; non-alcoholic advertisements that will lead to a decrease in alcohol consumption. The following hypothesis is therefore constructed:

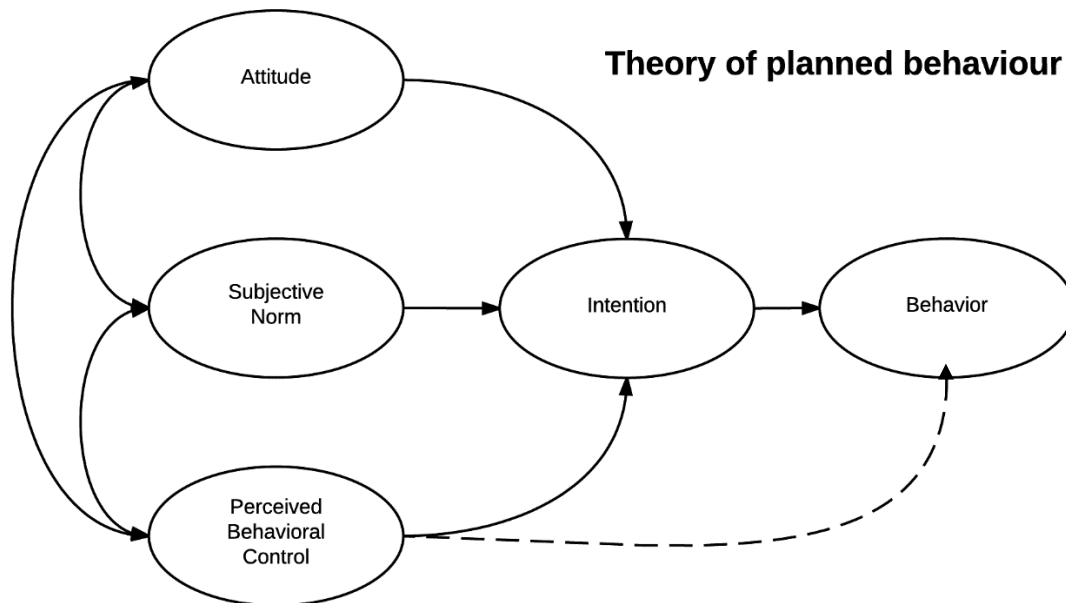
As some of the previous studies have suggested, drinking intentions and behaviors have a mediating effect on the relationship between alcoholic advertisements and alcohol consumption. To further investigate this possible mediating effect we will look at a theory that aims to explain drinking intentions and behaviors. This is the Theory of Planned Behavior by Ajzen published in 1991. In the next paragraph we will dive into this theory.

2.3 Theory of planned behavior

Explaining human behavior in all its complexity is a difficult task. There is spontaneous human behavior and there is planned human behavior. Spontaneous behavioral examples are gasping in pain after stubbing your toe, ducking when something is thrown at your head or twitching your leg in response to a doctor tapping your knee. Spontaneous human behavior is often an automatic response to the situation presented to the person. Planned behavior is the opposite of this. Planned behavior is a reasoned action based on cognitive consideration. It is behavior that you intend to do instead of it being an involuntary reaction to something. In this study we will focus on planned human behavior, because we are interested in the intention of alcohol consumption. Intention being the keyword here.

To ease the task of explaining human behavior, several theories have been developed. One of the models of human behavior that is frequently used to predict health-related behaviors, such as alcohol consumption, is the theory of planned behavior (TPB) by Ajzen (1991). The theory of planned behavior is an extension of the theory of reasoned action by Fishbein and Ajzen (1980). Both theories came into existence to predict an individual's intention to engage in a behavior at a specific time and place. The theories were intended to explain all behaviors over which people have the ability to exert self-control. Both theories focus on intention as the most important factor in personal behavior, but the theory of planned behavior has added one more dimension to the already existing theory of reasoned action, namely the variable of behavioral control, or rather the perception of it. Perceived behavioral control is seen as an additional determinant of intentions and behaviors. This addition to the theory has been found to be significant to the explained variances in a study done on the intention to use condoms (Jemmott, Jemmott, & Hacker, 1992), and again in a study about the intention to exercise (Godin, Valois, & Lepage, 1993)

Figure 2. Theory of planned behavior from Ajzen, I. (1991).



The theory of planned behavior model described by Ajzen in 1991 (Figure 1), proposes that the most important factor in personal behavior remains to be intention. Ajzen states that intentions are expected to capture the motivational factors that influence a behavior. Intentions are the indications of how hard people are willing to try in order to perform the behavior in question (1991). A person's intention to perform a certain behavior, determines the actual behavior according to TPB. The stronger the intention to engage in a given behavior, the more likely it is to perform that behavior (Asare, 2015). In a few words, according to the theory of planned behavior, human action is guided by three kinds of variables of intention: attitudes towards a certain behavior, subjective norms and perceived behavioral control (PBC). These three variables can lead to behavioral intention, which in turn can result in displayed behavior. The three variables; attitudes, subjective norms and PBC, are all responsible for behavioral intention, whether this is together or as standalone variables depends on the situation. Behavioral intention is different from behavior itself in the following way: behavior is an action that is displayed by a person in a certain situation, it can be easily observed by looking at the portrayed behavior. Behavioral intention, however, is not the behavior itself but the motivation to display a certain behavior. The intention is not always displayed physically, which is why it is harder to measure. Behavioral Intention is the motivational factor that influences behavior. As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance (Ajzen, 1991). However, the intention to behave a certain way does not always match the actual behavior that is displayed but it can predict the behavior for the most part. The relationship between behavioral intention and displayed behavior can be subject to additional factors like, social networks, cultural differences, peer pressure and social norms. For example; you can intent to not drink alcohol at a party because your intention is to be healthy, but you end up doing it anyway later at the party, this can be because of group pressure, lack of self-control social norms or other social factors.

Attitudes towards behavior

The first variable that can be used to explain intention is attitude towards a certain behavior. A person can have a particular attitude towards behavior that is displayed by others or by the self. Attitudes are defined as an individual's positive or negative evaluation of performing the behavior. Overall, attitudes are the evaluations of objects, people, things and behaviors performed by people. In psychology, an attitude refers to a set of emotions, beliefs, and behaviors toward a particular object, person, thing or event (Cherry, 2020). Attitudes can develop over time and can come into existence as a result of experiences or upbringing. When parental figures are positive towards alcohol consumption and have been displaying positive consumption behaviors in front of children then it is more likely for children and adolescents to have a positive attitude towards alcohol consumption as well (Gilligan, Kypri, & Lubman, 2012). This relationship is an example of attitude development connected to upbringing. Attitudes are not just temporary emotions toward a specific event, it is a learned tendency to evaluate things in a certain way. Although attitudes are enduring, they can change over time. Attitudes are important because they affect both the way we perceive the world and how we behave (Haddock & Maio, 2004).

Attitudes can be explicit and implicit. Implicit attitudes are attitudes we unconsciously develop and store in our automatic memory. Implicit attitudes are evaluations that occur without conscious awareness towards an object, person, thing or event. These implicit attitudes can have an influence on behavior that the individual may not be aware of (Devos, 2008). Implicit attitudes need to be built up 'slowly' through associative learning (Carruthers, 2018). An easier way of understanding implicit attitudes is to see them as memories that serve as a connecting link between objects, person, event or thing and feelings or thoughts toward that particular object, person, event or thing. For example, we might have a great date with someone, where you happen to be drinking a specific cocktail. The pleasant feelings associated with the nice date and that person, could rub off on the product, in this case the cocktail that was consumed. This can lead us to form favorable associations between that nice feeling and the cocktail we had. This makes it seem like the cocktail was the cause of that pleasant feeling. So, when we encounter the product at a later time, we get a favorable reaction to it. This reaction is not one that is deliberately performed by the person but is a matter of unconscious memories triggering that associated pleasant feeling. This unconscious association further helps establish implicit attitudes. Should we desire to report on deliberate behaviors, implicit attitudes are not the best type of attitude to investigate.

If we want to study more deliberative, consciously monitored behaviors, we should aim to measure the second kind of attitudes; explicit attitudes. Explicit attitudes tend to predict deliberative, controlled behaviors. Explicit attitudes are those that we are consciously aware of and are deliberately forming ourselves. An example of an explicit attitude can be a statement like this; I do not like the taste of alcohol therefore, I will not be drinking it, instead I will have some Iced Tea which I do like. A statement like that reflects the deliberate choice of not drinking alcohol because you do not like the taste of it. This statement does not reflect a certain memory or association you have with drinking alcohol, which would make it an implicit attitude. Different from implicit attitudes, explicit attitudes can be formed 'on the spot' through logical reasoning. Explicit attitudes do not need as much time as implicit attitudes to form. While implicit attitudes predict spontaneous behavior, explicit attitudes predict deliberate behavior. Therefore, when Ajzen talks about attitudes he is most likely referring to explicit behavior, since this can be connected to planned behavior. In previous studies done on explicit attitudes, the term has been studied as one of the determinants of behavior and intentions (Perugini, 2010). This is similar to how Ajzen sees attitudes as one of the determinants of intention and in turn behavior in this theory of planned behavior.

Subjective norms

The second construct used in the theory of planned behavior is called subjective norms. Norms are all things that are considered normal, typical or average in a certain environment, e.g. culture or social network. Norms are most commonly known as unwritten rules about how to behave. The level of importance of these norms is subjective to every person. The combination of the subjectivity and the general definition of norms brings us to the term that is used by Ajzen for the TPB; subjective norms. Subjective norms are a person's personal beliefs about whether important people in their lives think that he or she should engage in the behavior. It is a reflection of what their social network, cultural norms and group beliefs consider desirable behavior. Subjective norms are a reflection of an individual's perception of social approval or disapproval for performing a certain behavior. For example, there are a lot of people in a pub at rush hour. The majority of the customers are happily drinking some beers with their friends, when one person starts to stand on the table and loudly singing along to the radio. Most of the other customers in the pub seem to be surprised and even a bit annoyed by the man singing loudly and they ask him to stop making a scene. The behavior that is deemed normal by the majority of the pub-goers is to just have a beer with some friends while sitting down at the table. The unwritten rule in this pub is that you have to be respectful towards the other customers and not disturb them. The person singing on the table, is made aware of this unwritten rule, but does not think it is important enough to make him stop singing. The man had just received wonderful news about a promotion and wanted to celebrate with his friends the way he wanted to, by singing joyfully after some beer in a pub. Thus, this man is aware of the norms in the pub, but he does not believe that the given norm is shared by the important people in his life, those who are celebrating with him in the pub. All the man cares about are what his close friends seem to find acceptable behavior. The given norm of the pub is therefore, subjected to the man's personal beliefs of what he thinks his friends would approve of. His behavior is an example of how subjective norms can be different from the norm set in a certain environment. Ajzen describes the construct of subjective norms as a social factor that refers to the perceived social pressure to perform or not perform a certain behavior (1991). With this statement it becomes clear that subjective norms are closely related to social norms, which is a term we will discuss in depth shortly.

Perceived Behavioral Control (PBC)

The next construct Ajzen uses for the theory of planned behavior is the construct of perceived behavioral control (PBC). Perceived behavioral control represents an individual's perception of control over behavioral performance when presented with internal and external barriers. This construct expresses a person's belief on how easy or hard it is to display a certain behavior or act in a certain way. PBC refers to the belief of the amount of direction one has over the environment he or she is in. How much of the decision to behave a certain way is actually yours? Is it low, and do you therefore feel like you have no choice but to act a certain way? Or is it high, and do you feel like you are completely free to decide how you behave in a given situation. If a person believes that there is a low level of behavioral control, then the chances of them having weaker intentions to perform the behavior are higher. "As a general rule, the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual's intention to perform the behavior under consideration." (Ajzen, 1991, p. 188). Perceived behavioral control refers to our own perceptions of our ability to do the behavior. Some example statements that reflect on our own perceptions of ability to perform a particular behavior are; 'I find it difficult to not join my friends in drinking games.', 'I am likely to drink whatever people tell me to drink.', 'I am confident that I can be sober for a full weekend of partying.', and 'I am certain I can have fun without drinking alcohol.'. Let's take the third statement as an example; 'I am confident that I can be sober for a full weekend of partying.'. This statement refers to the personal perceived ability, 'I am confident', to perform an action, remain sober. The

perceived behavioral control is fairly high in this statement; I am confident to perform the behavior. Because of the high PBC, the intention to perform the action is also higher, and as a result the performed behavior will likely match the intention; to stay sober the entire party weekend. The greater a person's perceived behavioral control is, the stronger that person's intention will be to perform the behavior in question. Moreover, given a sufficient degree of actual control over the behavior, people will be expected to carry out their intentions when the opportunity arises (Ajzen, 2002). Finally, perceived behavioral control directly predicts behavior as well. Since the PBC is so closely related to behavioral intention, it can sometimes directly predict behavior. If people think they can perform a behavior they are much more likely to actually perform it.

Now that the three variables in the model of the Theory of planned behavior have been discussed, we have gained a better understanding of what comprises the intention variable, which is the most important variable after all according to Ajzen. The behavioral intention to act is a very important variable in this model because it directly predicts action and acts as a mediator between the three distinct variables; attitudes, normative beliefs, and perceived behavioral control, and behavior. This does not preclude that the other variables in the model are unimportant; however, behavioral intentions clearly have an important role in the prediction of behavior by means of the Theory of Planned Behavior.

2.4 Social norms

A social norm is “a generally accepted way of thinking, feeling, or behaving that is endorsed and expected because it is perceived as the right and proper thing to do.” (Turner, 1991, p. 3). It is a common mode of determining what is considered as normal, typical or average behavior in a certain environment, e.g. a cultural setting or a social network. Turner goes on to define social norm even more he says it is “a rule, value or standard shared by the members of a social group that prescribes appropriate, expected or desirable attitudes and conduct in matters relevant to the group.”. In this second half of his definition of social norms it becomes clear that attitudes and behaviors are involved with social norm. However, this does not mean that all three terms can be used interchangeably. Attitudes and behaviors are fragments of what social norms are. Social norms can be seen as regularities in attitudes and behavior that characterize a social group and differentiate from other social groups (Hogg & Reid, 2006). Norms are shared thoughts, attitudes and values prevailing desired behaviors. Norms do this by describing what one ought to do, and in a way, can prescribe moral obligations. Deviations from the social norms of a group can result in loss of social status, exclusion and rejection (Festinger, 1950). Social norms are certainly not something to take lightly, they can have a big influence on our behavior. Since the desire to fit in and the need for acceptance is a basic human instinct it is not impossible to understand the influence social norms can have on the way we act (Cannon, 2016).

Social norms are communicated by what people do and say in their everyday lives (Telzer, van Hoorn, Rogers, & Do, 2018). This can be done either indirectly, e.g. interpreting norms from someone's behavior, or can be done directly; directly talking about what is and what is not accepted as normative behavior in a group. Direct communication sources are defined by what words mean. Indirect sources are defined by what words imply. For example, you are at a party and everyone is playing a game, in order to join this game, you have to do something. You are told that if you want to play the game and join the party, you have to take a shot of vodka. This makes it clear to you that the normative behavior of this specific party is to consume alcohol. This social group evidently has a positive attitude towards alcohol consumption which is why it is seen as a crucial part of their social norms. An indirect way of interpreting the social norm in this situation would have been the observation that all party goers are consuming alcoholic beverages. This source of normative information is not exactly flawless because in some situation's indirect implications of

words and behaviors can be interpreted in a different way by different individuals. This can make the communication of norms confusing. In direct communication this risk is lower, but still existing because some people do not know how to put the exact norms into terms the recipient understands. Luckily, direct and indirect observations are not the only one form of evaluating norm construction. Two other options are observable behavior and personal attitudes. According to researchers norms are constructed by evaluating the raw 'data' from three sources in life: observable behaviors, the beforementioned direct and indirect communications and knowledge of the self (Borsari & Carey, 2001; Miller & Prentice, 1996).

Observable behavior

The source mentioned by Miller and Prentice is the one most often available: observable behavior. Observable behavior is all behavior that can be seen by the human eye. For example, going to the grocery store to buy drinks, walking to a nearby pub or meeting up with your friends for a night out. These are things that people can do, and other people can see it happening. Displayed behavior can be seen by anyone with working eyesight that is close enough to witness the occurrence. Although observable behavior is the most available source of information, it is often not a hundred percent reliable. Individuals tend to view others' behaviors as something that is reflective of their internal characteristics instead of the behavior being influenced by outside forces, like the environment the person is in (Ross, 1977). When assessing one's own behavior though, this is the other way around. When it comes to personal behavior, especially negative behaviors like impatience, annoyance and wrongful assumptions, we tend to make excuses for ourselves. It is easier to accept that something from outside yourself made you behave in that negative way, than it is to accept that it is indeed your own fault. Our own judgement is therefore not a hundred percent reliable when it comes to judging our own behavior and that of others. It is likely that our judgement will be skewed in favor of ourselves, whether this is based on facts or beliefs.

Personal attitudes

In addition to behaviors there are personal attitudes that can influence our perception of norms. A personal attitude is an individual attitude that is not necessarily shared by other people in the environment, hence is different from the overarching term attitudes. Personal attitudes are meanings we have attached to given things like; behaviors, events and people. We all have personal definitions of what is right and what is wrong, justified or unjustified, and what is appropriate or inappropriate. If individuals are taught that a specific attitude should be very important to them, then it is likely that these individuals will indeed take on that specific attitude. For example, if your parents have never consumed alcohol in front of you and have always told you about the negative side effects of alcohol, then you are more likely to have a negative personal attitude towards alcohol consumption (Spijkerman, Van den Eijnden, Overbeek, & Engels, 2007). The more individuals have learned that specific attitudes are good, desirable or justified, the more likely they are to engage in the behavior prescribed by that attitude (Akers et al., 1979). If our personal attitudes are conflicting with the attitudes within the social norm, it can be tricky for individual to conform to the social norm. If it is impossible for the individual to set aside their own personal attitudes, it is hardly possible to successfully communicate the attitudes attached to the social norm. Individuals with personal attitudes that do align with the social norm that is being interpreted, will have an easier time picking up the social norm. They will also be more likely to conform to the social norm if their personal beliefs align with it.

Gendered norms

When it comes to alcohol consumption, there seems to be a different norm for men and women. In most cultures social norms regarding alcohol consumption are in favor of men consuming more alcohol than women. For men, drinking can be seen as a demonstration of their masculinity, their individuality, their willingness to take risks, and their superior status (Nolen-Hoekstra, 2013).

Women, however, are viewed as less moral and less responsible than men when consuming alcohol. Women who drink are seen as more sexually promiscuous and sexually vulnerable. In some cultures, women's drinking behavior is perceived a threat to their roles as mothers and are in conflict with 'family values' (Nolen-Hoekstra, 2013). Studies have found a significant difference between the genders when it comes to social norm influences on alcohol consumption (Gliksman, Newton-Taylor, Adalf, & Giesbrecht, 1997). In this study we will take gender into consideration when we evaluate the influence of social norm.

Hypotheses

After reading about social norms and the theory of planned behavior, it has become clear that social norms and intentions can influence our behavior. The currently existing positive social norm regarding alcohol consumption has made its mark on consumption behavior. This study is interested in the ongoing change of social norm regarding alcohol consumption. The positive social norm regarding alcohol consumption seems to be decreasing (La Vecchia, et al., 2014). Whether this decrease is because of environmental changes, cultural changes or small changes like a change in alcoholic advertisements, is yet to be discovered. Furthermore, we can observe that this decrease in positive social norm towards alcohol consumption is matching up with a decrease in alcohol consumption itself. Whether or not this relationship is significantly correlated is yet to be determined. In this research we aspire to uncover this possible relationship, the hypothesis therefore is the following:

Hypothesis 2: A decrease of the positive social norm towards alcohol consumption, will lead to a decrease of alcohol consumption.

This study aims to confirm the negative relationship between social norm change and the decrease in alcohol consumption.

In addition to the before mentioned hypotheses, this study aims to investigate a mediating effect of the variable social norm on the relationship between non-alcoholic advertisements and alcohol consumption. Concluding from our theory overview, we hypothesize that social norm will have a mediating effect on the relationship between an increase of non-alcoholic advertisements and the decrease in alcohol consumption amongst adolescents. To investigate this effect, a stepwise linear regression analysis will be performed. The hypothesis that will be tested in this analysis is the following:

Hypothesis 3: An increase of non-alcoholic advertisements will negatively influence the existing positive social norm towards alcohol consumption, which consequently will negatively influence alcohol consumption amongst adolescents.

This study aims to confirm the mediating effect of social norm on the relationship between non-alcoholic advertisements and alcohol consumption.

3 Methods

This chapter will explore the methodology used to test the aforementioned hypotheses. The next sections will describe the participants, the procedure and the measures used.

3.1 Participants

The population tested in this particular study is that of high school students, aged between 12 and 17, living in The Netherlands. Several high schools across The Netherlands, with varying types of secondary education levels, were asked to participate in order to get a variety of socio-economic status adolescents. The secondary education levels in the Netherlands range from theoretical preparatory education (Praktijk Onderwijs) to the highest level that is known as the university preparatory education (VWO). Including the two levels in-between; VMBO and HAVO four categories are made to measure school levels

Both sexes were asked to participate in the study since previous studies have showed that both women and men indulge in underage alcohol consumption. In addition to that previous studies have shown that there is a difference between genders when it comes to social norm influencing alcohol consumption (Gliksman, Newton-Taylor, Adalf, & Giesbrecht, 1997). In order to measure this influence, both genders were asked to participate. All the participants are asked to complete a questionnaire through a link that is distributed via school emails sent by teachers, and by sharing of the link with other high school students. This online distribution is necessary because of visiting restrictions due to the preventive Covid-19 measures. This procedure of sharing the questionnaire online aims at obtaining a sample of at least 100 students.

3.2 Design and procedure

This study uses a between-subject design questionnaire, which is a design that has been used in previous studies on alcohol consumption (Koordeman, Anschutz, van Baaren, & Engels, 2010). Using a randomizer in Qualtrics, the respondents are evenly split in two groups. Each group will be subjected to either condition A or condition B of the questionnaire. Condition A consists of regular alcohol advertisements and condition B contains non-alcohol advertisements. In both conditions, participants are asked to evaluate the advertisements shown to them. Both conditions aim to measure the mediating effect of social norm, on the relationship between the independent variable non-alcoholic advertisements and dependent variable, alcohol consumption.

The participants open the questionnaire, written in Dutch, through a link that is sent to them, either by their peers or by their teachers. We are unable to make a distinction between senders due to privacy regulations. It is therefore not possible to take this variable in to our analyses. The questionnaire, generated by Qualtrics, first informs the subjects that the purpose of the study is to learn more about alcohol advertisements. The participants are presented with a ‘cover story’ about alcohol advertisements and its influence on adolescents. This study uses a cover story in order to measure the mediating effect of social norm, without suggesting to the participants that social norms ‘should’ affect their answers. The use of a cover story can be beneficial in terms of authentic responses. If we were to tell the participants the aim of this study is to investigate the effect of non-alcoholic advertisements on social norm and a decrease in alcohol consumption, then the desirability of the ‘right answer’ would be likely to influence response authenticity and honesty. To disguise the true purpose of the research, cover stories can be used (Lewis-Beck et al., 2004). This disguise can be seen as deceptive and therefore must be ethically considered carefully. However, this study can justify the cover story because its principal use is not to deceive, but to ensure the validity of the research findings at little cost to the participants. In the questionnaire the focus was put on the advertisements itself and was less focused on the social norms that were attached to the products displayed. For example, a beer advertisement that stimulates new experiences, is questioned about the design of the advertisement instead of the message it displays.

Considering the fact that social gatherings have been prohibited for the last few months, participants are asked about their past and future behavior. Participants are also informed about the strict confidentiality of the questionnaire in order to make sure the participants feel comfortable to answer the questions truthfully. Considering the illegality of underage drinking, untruthful answers can be expected and this needs to be considered a discussion point.

Once the participants are informed about the study and its confidentiality, the survey moves on the first set of questions. Here the subjects are first asked to fill out questions regarding their demographic information, sex, age, high school level and high school location. These demographic variables are added to the design of the questionnaire because previous research has shown that age, gender and place of residence predicts alcohol consumption (Gliksman et al., 1997, Wechsler et al., 1995). For example, proximity to bars or supermarkets can increase the likelihood of alcohol acquisition. Another factor of geographical differences is the different cultures. Even in The Netherlands there are cultural differences between rural and urban areas. These cultural differences can lead to differences in norms. Norms for acceptable drinking behavior can also vary between urban and rural areas (Dixon & Chartier, 2016).

In this same block participants are presented with two questions on alcohol consumption habits. In the questions on alcohol consumption habits, participants are asked to give an estimate number of drinks consumed in an average weekend. We ask the participants these questions twice, before and after introducing the independent and mediating variables, to get a better understanding of the affect these variables have.

The setting of the questionnaire made it that only Dutch students between the age of 12 and 17 could proceed to answer the rest of the questionnaire. After the demographic questions, participants are randomly subjected to either condition A or condition B. In both conditions, advertisements for beverages are shown. There is one advertisement for a beer product and one advertisement for liquor spirits, Vodka (Figure 1 to 4). By presenting advertisements for these two categories of beverages, this study intends to target the interest of both girls and boys. A report on alcohol consumption in the Netherlands, indicated that boys were more likely to drink beer and girls were more likely to drink liquor spirits than beer (GGD IJsselland, 2011).

Conditions

In condition A, participants are presented with two alcoholic advertisements, one for beer and one for vodka. After each advertisement is shown, participants are asked to answer six questions regarding the advertisement. Two questions focus on the participants' willingness to consume the product advertised before. One question regarding the Heineken product and one regarding the Smirnoff product. The other four questions are connected to social norm regarding alcohol consumption. These questions enquire about the opinions of parents and peers on the consumption of the product advertised. In addition to asking about the opinions of peers and parents, the participants are asked whether or not this opinion is highly valued. Here the questions try to connect to social norm theories, like the theory of planned behavior, that suggest that peer pressure contributes to social norm forming (Jamison & Myers, 2008).

Condition A

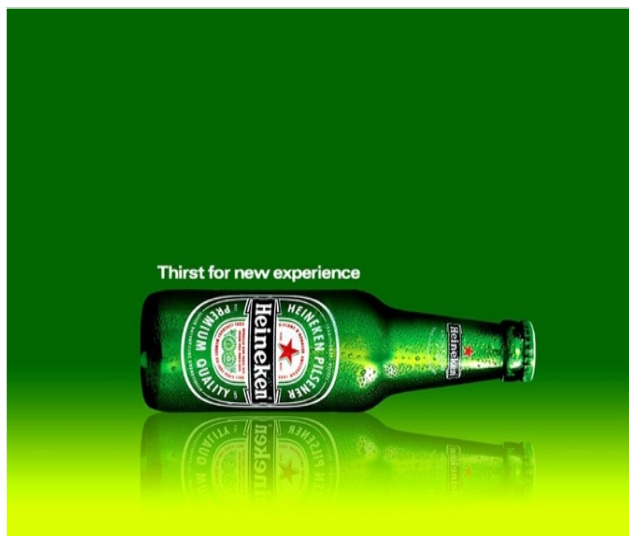


Figure 3 Alcoholic Beer Ad



Figure 4 Alcoholic Vodka Ad

In condition B participants are presented with non-alcoholic advertisements, again one for non-alcoholic beer and one for non-distilled vodka. In this condition the vodka advertisement is a fake advertisement, that makes it seem like the vodka is non-alcoholic, or non-distilled as you call it in regard to spirits. Unfortunately, there is no beverage company that produces both non-distilled and regular spirits, hence a fake advertisement was needed to make it seem like it did. The reason for this fake advertisement is to rule out possible brand favoritism. A study done by Thoma and Williams showed that consumers tend to favor brands that they recognize over more unknown brands (2013). Since most non-distilled spirit companies are relatively new and unknown, we have chosen to go with a more well-known brand that would work for both conditions.

Condition B



Figure 5 Non-Alcoholic Beer Ad



Figure 6 Non-Alcoholic Vodka Ad

After presenting either condition A or B, the questionnaire moves on to the last two questions, these questions are the same as the alcohol consumption questions asked in the first block of the questionnaire. In these questions, participants were again asked to give an estimate number of drinks consumed in an average weekend, this time for weekends yet to come. After the last questions, participants were thanked for their contribution and were stimulated to share the survey with their peers.

3.3 Measures

Demographics

In table 1 all the variables with their corresponding questions and answers are presented. The very first section of the questionnaire asked the participants to answer five demographic questions. The first is on sex, here the participants are asked to choose between; male, female and other. The option of 'other' is added to improve inclusivity. The variable 'sex' will aid as a comparability measure between groups.

The second question is about the age group. Participants can choose between; under 12, 12 through 17 and above 17. This question serves as a participant filter. Those who choose 'under 12' and 'above 17' are not permitted to fill in the rest of the survey. The survey ends here for these participants and they are thanked for their contribution. There is reason to believe that age is positively related to alcohol consumption given that previous research has provided evidence for this relationship (Brown, et al., 2009; Covell, 1992). Due to many other studies done on the relationship between age and alcohol consumption age is included as a controlling variable instead of independent variable in the analyses

The third demographic variable is school level. Here there are four options, 'theoretical preparatory education (Praktijk onderwijs)', 'vocational secondary education (VMBO)', 'senior general education (HAVO)' and 'university preparatory education (VWO)'. These different levels are possibly connected to higher and lower intelligence levels (IQ) and could be of influence when it comes to alcohol consumption. For the sake of this study we will take school levels as an indication of IQ. There is evidence at the individual level that alcohol consumption and IQ are positively related: individuals with higher IQ scores tend to consume relatively more alcohol than those with lower IQs (Belasen & Hafer, 2013; Müller, et al., 2013). The outcome of higher alcohol consumption related to higher educational levels can also be linked to age. Generally speaking, higher educational programs like VWO take up more time than lower educational level programs, e.g. VMBO. This means that students in their last year of VWO are older than final year students of VMBO programs. As mentioned before in the theory section of this paper, age seems to be positively correlated to alcohol consumption.

The last variable is designed to measure geographical location of the participants. Here the participants are asked to fill in the name of the city they go to school in. The reason for this control variable is to check whether or not there is a difference between rural and urban environments.

Alcohol consumption

Alcohol consumption is measured on a 20-point scale, where each point represents a number of drinks consumed. Participants are asked to answer two similar questions about average consumption of beverages on the weekend. Question one is: How many alcoholic drinks do you consume in an average weekend? Question two is: How many non-alcoholic drinks do you consume in an average weekend? The first question focuses on alcoholic drinks, and the second one focusses on non-alcoholic drinks. Both these questions are repeated at the end of the questionnaire, in order to measure the possible influence of the different advertisements on future alcohol consumption. When the questions are asked again at the end of the survey, the respondents are asked about their future consumption instead of their current consumption.

Advertising effectiveness

Advertising effectiveness refers to the potential influence of an advertisement on viewers' attitudes toward the product. Effectiveness of each advertisement is measured with two questions. The first addresses the attractiveness of the advertisement and the second addresses the intentions to purchase the product promoted. The respondents were asked how much they agree, on a 5-point

scale (1 [strongly disagree]–5 [strongly agree]), that the advertisement “is attractive to me” and “makes me want to buy the product.” These two questions are for the most part there to fit the cover story. This study does not necessarily aim to test the effectiveness of the advertisements when it comes to the design, these two questions will therefore not be in the spotlight of this research. However, we will test this variable to see if it has an unexpected influence on the data.

Social norms

On the same 5-point scale as mentioned above, participants are presented with four social norm questions. The participants are asked about how much they agree with the following statements; ‘My parents would approve of me consuming this product’, ‘My parents’ opinion is important to me’, ‘My friends would approve of me consuming this product’, ‘My friends’ opinion is important to me’. Yet again, respondents are asked to choose between options on the 5-point scale of 1 [strongly disagree] -5 [strongly agree]. An earlier study done in 2007 on the impact of peer and parental norms and behavior on adolescent drinking, found that there was a difference in influence of peer and parental norms on adolescent drinking (Spijkerman, Van den Eijnden, Overbeek, & Engels, 2007). Spijkerman et al. found in their results that peer norms had a more significant influence on alcohol consumption than parental norms had. In this current study we will therefore study peer and parental norms as a separate variable as well as one overarching ‘social norm’ variable.

Table 1. Demographics

<i>Questions</i>	<i>Answer options</i>
Demographics	
Gender	Male Female Other
Age	Below 12, 12, 13, 14, 15, 16, 17, above 17
Education level	Praktijk onderwijs VMBO HAVO VWO
Geographical location	Open answer
Alcohol consumption- current	
Number of Alcoholic drinks	20-point slider scale
Number of Non-alcoholic drinks	
Advertisement effectiveness	
‘The advertisement is attractive to me’	Likert scale 1-5
‘The advertisement makes me want to buy the product’	1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree
Social norm	
‘My parents would approve of me consuming this product’	Likert scale 1-5
‘My parents’ opinion is important to me’	1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree
‘My friends would approve of me consuming this product’	
‘My friends’ opinion is important to me’	
Alcohol consumption- future	
Number of Alcoholic drinks	20-point slider scale
Number of Non-alcoholic drinks	

4 Results

The data analysis was performed using the SPSS software. The analysis, firstly, included examining the statistical properties of participants and the scales used. Some recoding was necessary in order to properly analyze the data. Using the method by Baron and Kenney (1986), we came up with three separate analyses that help us measure the hypotheses of this study. Separate analyses were performed to measure the effects of all three variables, before measuring the mediating effect of social norm on the relationship between non-alcoholic advertisements and alcohol consumption. The separate analyses were conducted using the PROCESS v3 SPSS extension developed by Hayes (2017).

4.1 Participants

Of the total of 125 responses, 44 responses were incomplete or unusable, e.g. respondents were too old or too young. This left us with a sample of 81 respondents who answered all questions of the questionnaire. Within the sample of $N=81$, 74.1% ($n=60$) was female, and 24.7% ($n=20$) was male. The mean age was 15.5 ($SD=1.28$). Descriptive statistics and frequency tables for the items on demographics are summarized in table 2 below. Ages below 12 and above 17 were taken out of the data set. The variable geographical location was recoded into rural and urban. Rural meaning all the places that are located in the province area of the Netherlands. And urban meaning all the places that are located in the Randstad area of the Netherlands. The cut off between whether a given answer of geographical location was inside or outside the Randstad area was based on a rapport by the RIVM stating which areas belong to the Randstad (2006). This rapport describes the Randstad as a 'mega city', where all included areas share similar designs in terms of economy, culture and education. It is expected that people living in the Randstad share similar beliefs and are distinctively different from people living in rural areas. The way this study has divided the rural and urban groups, is based on this perceived difference in thinking. The main reason the urban group is bigger is because the majority of respondents came from the same high school situated in Zaanstad. It was not workable to differentiate between these respondents; therefore, the group remain skewed towards the urban side.

Table 2. Frequency and descriptive statistics - Demographics

<i>N=81</i>	<i>Frequency</i>	<i>Percent (%)</i>	<i>M</i>	<i>SD</i>
<i>Gender</i>			1.77	0.45
Male	20	24.7		
Female	60	74.1		
Other	1	1.2		
<i>Age</i>			15.53	1.28
12	2	2.5		
13	7	8.6		
14	5	6.2		
15	17	21		
16	32	39.5		
17	18	22.2		
<i>School level</i>				
Praktijk onderwijs	1	1.2		
VMBO	14	17.3		
HAVO	61	75.3		
VWO	5	6.2		
<i>Geographical location</i>				
Rural- Provincie	27	33.3		
Urban- Randstad	54	66.7		

4.2 Scale validation and descriptive statistics

In order to perform the scale validation, several variables had to be re-computed and grouped in cohorts. All variables were regrouped into 4 groups: variables regarding demographics, variables connected to advertisements, variables for social norm and variables for alcohol consumption. These four groups correspond with the measured concepts in the questionnaire. In order to regroup the variables together, the values scored on the statements were added up and divided by the number of statements in each category to get the mean score per variable. With the purpose of presenting comprehensive statistics, cohorts were created for the variable alcohol consumption. In the analysis performed, these cohorts were not utilized.

Social norm

For the variable social norm, 4 items are scaled and validated together in table 3. In this table the data collected for the two questions concerning peer norms and parental norms are presented with a Cronbach's alpha of $\alpha = 0.638$. Which indicates that the scale can be validated as moderately acceptable and reliable. In addition to the scaled items, social norm for both conditions and the overall social norm variables are presented in table 3

Table 3 Descriptive statistics – Social norms

	Q1- Would approve of...		Q2- ... opinion is important		Q1&Q2 Combined	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Parental</i>	2.49	1.14	3.85	0.84	3.17	0.65
<i>Peers</i>	3.52	1.0	2.84	0.97	3.18	0.69
	<i>M</i>	<i>SD</i>				
<i>Overall social norm- Parental and peers combined</i>	3.17	0.54				
<i>Social norm Condition A</i>	3.11	0.49				
<i>Social norm Condition B</i>	3.25	0.59				

Alcohol consumption

For the variable alcohol consumption, 4 items are scaled together. The 4 items include current alcoholic and non-alcoholic consumption and future alcoholic and non-alcoholic consumption. For the Cronbach's alpha test, the scale with 4 items is validated with $\alpha = 0.716$. This means that the scale is decently reliable, the 4-item scale is therefore accepted. In addition to the four mentioned items, table 4 displays descriptive statistics for the variables current alcoholic and non-alcoholic consumption, future alcoholic and non-alcoholic consumption and a difference score for both condition A and B.

Table 4 Descriptive statistics – Beverage consumption

	Current consumption		Future consumption		Score difference	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
All data - N=81						
<i>Alcoholic</i>	2.05	2.62	4.16	3.85	2.11	2.91
<i>Non-Alcoholic</i>	8.80	6.12	8.91	5.87	0.11	2.79
Condition A - N=44						
<i>Alcoholic</i>	1.89	2.64	3.86	3.18	1.98	2.31
<i>Non-Alcoholic</i>	8.45	6.18	8.77	6.15	0.32	3.02
Condition B – N=37						
<i>Alcoholic</i>	2.24	2.62	4.51	4.54	2.27	3.52
<i>Non-Alcoholic</i>	9.22	6.09	9.08	5.61	-0.14	2.52

4.3 Variable recoding

Non-alcoholic advertisement variable

The variables connected to the advertisements, both non- and alcoholic advertisements, were categorized into two groups; non-alcoholic advertisements and alcoholic advertisements. This category relates back to the two different conditions of the experiment; condition A for the alcoholic ads and condition B for the non-alcoholic ads. In both conditions, the social norm questions were presented.

Social norm variable

For the social norm variables, a distinction was made between parental and peer norms. For both the parental and peer norm variable, values corresponding to the two questions asked in the survey; Q1- 'My parents/friends would approve of me consuming this product', and Q2- 'My parents/friends' opinion is important to me', were recoded into a combined variable. By recoding the questions into parental and peer norms, the difference of influence could be indicated effectively. An overall score of social norm was also created by combining all four questions together. This inclusive social norm variable was employed in the linear regression analyses. All variables that were created for social norm were previously presented in table 3.

Alcohol consumption variable

In order to successfully analyze the influence of social norms on alcohol consumption we had to calculate beverage consumption itself first. For beverage consumption we started out with four separate variables; current alcohol consumption, current non-alcoholic consumption, future alcohol consumption and future non-alcoholic consumption. Two new variables were created where the score difference between current and future consumption was computed by subtracting the scores for current consumption from the future consumption scores. One of these new variables represents difference in alcohol consumption and the other one represents the difference in non-alcoholic consumption. These new variables could tell us exactly how the consumption scores changed when the respondents finished the survey, e.g. increased or decreased frequency of beverage consumption, and how the two conditions affected the scores. When we perform our analyses, we will use the newly created variables for score differences as the variable for non- and alcohol consumption.

Cohorts

As mentioned before, cohorts were created for alcohol consumption. These cohorts were not used in the analysis and were exclusively made to present a comprehensible frequency table (table 5) for beverage consumption. In table 5 the variables for alcohol consumption, 'current alcohol and non-alcohol consumption', numbers of drinks were placed in three cohorts. The first cohort fits a number of drinks below six, 0-5 drinks were recoded into 'Low consumption'. Consumption in this first category would not be considered binge drinking and will therefore be labeled as 'low' consumption. Consumption of drinks 5 and more is labeled as binge drinking by researchers (Jacobus, Squeglia, Bava, & Tapert, 2013), in this study the categories moderate and high, are both within the overarching category of 'binge drinking'. The cohort called 'Moderate consumption' consists of the number of drinks between 6 and 9. The last cohort 'High consumption' represents drink consumption from 9 drinks and up. To clarify, the terms moderate and high are not relative to consumption in general, but to binge drinking levels for alcohol consumption. For non-alcoholic consumption, the terms moderate and high are relative to general consumption.

Table 5 Frequency statistics – Beverage consumption

<i>N=81</i>	<i>Frequency</i>	<i>Percent (%)</i>
Current beverage consumption		
<i>-Alcoholic</i>		
Low (<-5 drinks)	70	86.4
Moderate (6-9 drinks)	9	33.3
High (10-> drinks)	2	2.5
<i>-Non-Alcoholic</i>		
Low (<-5 drinks)	24	29.6
Moderate (6-9 drinks)	27	33.3
High (10-> drinks)	30	37
Future beverage consumption		
<i>-Alcoholic</i>		
Low (<-5 drinks)	55	67.9
Moderate (6-9 drinks)	18	22.2
High (10-> drinks)	8	9.9
<i>-Non-Alcoholic</i>		
Low (<-5 drinks)	27	33.3
Moderate (6-9 drinks)	19	23.5
High (10-> drinks)	35	43.2

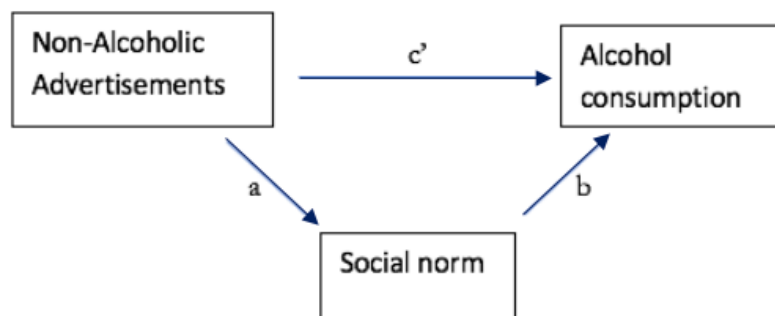
4.4 Mediation analysis

In order to analyze whether social norm has a mediating effect on the relationship between non-alcoholic advertisements and alcohol consumption, three analyses need to take place. Following the method for mediation by Baron and Kenny's (1986), the mediation analysis will go as following: The first analysis pictured in figure 7, shows the analysis as path c in the model. This path will predict the dependent variable: alcohol consumption from the independent variable: non-alcoholic advertisements through a bivariate regression analysis. The second analysis is the analysis of path a, pictured below in figure 8. This path will predict the mediating variable: social norm from the independent variable: non-alcoholic advertisements again through a bivariate regression analysis. Lastly, we have the analysis for path b and c', also seen in figure 8. This path aims to predict the dependent variable: Alcohol consumption from the mediating variable: social norm and the independent variable: non-alcoholic ad, while keeping the mediating variable in the model. These analyses will be done using a multiple regression analysis in the PROCESS extension by Hayes (2017).

Figure 7 First analysis, path c



Figure 8 Second and third analyses, path a and



For the aforementioned analyses, table 6 has been made to show each investigated path with its results. In this table, DV stands for dependent variable and IV stands for independent variable. For every path the DV and IV are mentioned to make it easier to understand what we are actually studying.

Table 6 Testing paths with results

Testing paths	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>t</i>	<i>Sig. P-value</i>
Path c: DV = Alcohol consumption IV = Non-Alcoholic advertisements	0.293	0.653	0.050	0.449	0.655
Path a: DV = Social norm IV = Non-Alcoholic advertisements	0.143	0.120	0.133	1.190	0.238
Path b and c': DV = Alcohol consumption IV = Non-Alcoholic ads (c')	0.170	0.654	0.029	0.260	0.796
IV = Social norms (b)	0.864	0.609	0.160	1.419	0.160

Analysis for path c: The effect of non-alcoholic advertisements on alcohol consumption

In order to test whether non-alcoholic advertisements have an effect on alcohol consumption a stepwise linear regression analysis was done. In this analysis, alcohol consumption was used as the dependent variable and non-alcoholic advertisements was used as the independent variable. Control variables of age, sex, location and educational levels were included in the analysis, these variables were computed in model 1. In model 2, the dependent variable was added. The analysis showed that the independent variable had an insignificant effect on the dependent variable ($\beta = 0.050, p = 0.655$). Thus, the total effect of Non-Alcoholic advertisements on Alcohol consumption measured in this current study is insignificant.

Analysis for path a: The effect of non-alcoholic advertisements on social norm

In order to test whether non-alcoholic advertisements have an effect on social norm a linear regression analysis was done. Control variables of age, sex, location and educational levels were included in the analysis, these variables were computed in model 1. In model 2, the dependent variable was added. In this analysis, social norm was used as the dependent variable and non-alcoholic advertisements was used as the independent variable. The analysis showed that the independent variable had an insignificant effect on the dependent variable ($\beta = 0.133, p = 0.238$). In path b the significance level was calculated to be 0.238, which unfortunately is an insignificant effect level. This means that we have to reject hypothesis one:

Hypothesis 1: An increase of non-alcoholic advertisements will lead to a decrease of the current positive social norm towards alcohol consumption.

Concluding from the insignificant effect found in this current study, we are unable to say that an increase of non-alcoholic advertisements will lead to a decrease of the current positive social norm towards alcohol consumption.

Analysis for path b: The effect of social norm on alcohol consumption

In order to test whether social norm has an effect on alcohol consumption a linear regression analysis was done. In this analysis, alcohol consumption was used as the dependent variable and social norm was used as the independent variable. Control variables of age, sex, location and educational levels were included in the analysis, these variables were computed in model 1. In model 2, the dependent variable was added. The analysis showed that the independent variable had an insignificant effect on the dependent variable ($\beta = 0.160, p = 0.160$). In the analysis for path b, the direct effect of non-alcoholic advertisements on alcohol consumption was measured at 0.160, meaning that this effect was insignificant. A bootstrapping effect for both the direct and indirect effect of social norm was measured by PROCESS. The bootstrapping effect for the direct effect of social norm, ranged from -0.133 to 0.440. This means that the effect crossed the zero and can therefore not be seen as significant. By looking at this insignificance level, we are unable to confirm the second hypothesis:

Hypothesis 2: A decrease of the positive social norm towards alcohol consumption, will lead to a decrease of alcohol consumption.

In this study we were unable to provide evidence that support the claim that a decrease of the positive social norm towards alcohol consumption will lead to a decrease of alcohol consumption. This is not to say that the effect does not exist at all, it just means that in this current study we were unable to provide further confirmation.

Analysis for path c': The mediating effect of social norm on the relationship between non-alcoholic advertisements and alcohol consumption

In order to test whether there is a mediating effect of social norm on the relationship between non-alcoholic advertisements and alcohol consumption, a linear regression analysis was done. Control variables of age, sex, location and educational levels were included in the analysis, these

variables were computed in model 1. In model 2, the dependent variable was added. In this analysis, alcohol consumption was used as the dependent variable and non-alcoholic advertisements was used as the independent variable. Social norm was included as the mediating variable. The analysis showed that the independent variable had an insignificant effect on the dependent variable ($\beta = 0.029, p = 0.796$), as well as the mediating variable having an insignificant effect on the relationship between the two ($\beta = 0.160, p = 0.160$).

For path c', the indirect mediating effect of social norm on the relationship between non-alcoholic advertisements and alcohol consumption was calculated to be 0.123. Which means that the effect was insignificant in this study. The indirect standardized bootstrapping effect of social norm ranged from -0.048 to 0.149 which again means that the effect crosses zero and is therefore not significant. From this analysis we can conclude that in this study we have unfortunately been unable to confirm the third hypothesis:

Hypothesis 3: An increase of non-alcoholic advertisements will negatively influence the existing positive social norm towards alcohol consumption, which consequently will negatively influence alcohol consumption amongst adolescents.

This study failed to demonstrate that an increase of non-alcoholic advertisements will negatively influence the existing positive social norm towards alcohol consumption, which would consequently negatively influence alcohol consumption amongst adolescents. The third hypothesis is therefore rejected in this current study. Once more this is not to say that the effect is impossible, it simply means that in this current study we are unable to draw this conclusion from the data gathered.

Analysis of controlling variables

While we were running all of the different regression analyses, we included our demographic variables as control variables. While we did not get any significant levels for our main three variables, the regression analysis did present us with some significant levels for education and age. In a stepwise regression analysis done with the variables age, sex, location and educational level, and a dependent variable of Alcohol consumption difference score, education levels had a marginally significant outcome ($\beta = 0.209, p = 0.074$). This was the first time after running multiple different analyses that we got a significant level from any of the variables. Unfortunately, when the stepwise regression added the next variable in the second model, social norm, the level of significance disappeared. Here the significance of variable education jumped up to a p value of 0.121, which is a level that can no longer be deemed significant. We ran multiple other stepwise regressions, each time our control variables were in the first model. In the second model we added different variables each time, parental norms, peer norms, single questions peer norms, single question parental norms. In spite of the changed variables, significance levels for education seemed to become insignificant every time another variable was added. The significance level of the variable itself when tested with the other demographic variables is interesting in itself. In previous studies there was evidence found that alcohol consumption and IQ were positively related (Belasen & Hafer, 2013). Individual with higher IQ, and therefore higher education levels, tend to consume relatively more alcohol than those with lower IQ and education levels. This study further supplies evidence for this claim that education level has a significantly positive effect on alcohol consumption.

When we changed the variable for alcohol consumption from the difference score to future consumption, stepwise analysis gave us a significant p value for age. Age had a p value of 0.026 when tested on future alcohol consumption. When social norm was added to the regression model, this p value went up to 0.169 and was therefore no longer significant. But when we look at the first model of the regression analysis, we do see a significant p value. This means that age is positively related with alcohol consumption. This would confirm what previous research has

shown about age and alcohol consumption. There is evidence to believe that youths in their later adolescents, 16 -20, have higher alcohol consumption levels than those in their early adolescents (Brown, et al., 2009). This seems to fit with the results from this current study. Unfortunately, this study was not designed to measure the exact effect of age on alcohol consumption and future research on this specific interaction is therefore recommended.

Another variable that unexpectedly showed a significant p value is the variable for peer social norm connected to the statement 'My friends would approve of me consuming this product'. Apparently, this particular question measuring peer norms had a significant effect on the difference in alcohol consumption score. The p value given for this variable was 0.079, which indicated that Q1: 'My friends would approve of me consuming this product' for peer norms has a significant effect on the difference in alcohol consumption. Previously in chapter three of this study it has been mentioned that previous studies have found that peer norms had a more significant influence on alcohol consumption than parental norms had (Spijkerman, Van den Eijnden, Overbeek, & Engels, 2007). This study seems to confirm this. The results show that peer norms did have a significant effect and parental norms did not have a significant effect on alcohol consumption.

5 Conclusion

5.1 Discussion

The present study sought out to explore the effect of non-alcoholic advertisements on alcohol consumption with a mediating effect of social norm. Overall the study was unable to support any of the hypothesis written for the study. Several separate regression analyses were run in order to explore the hypothesis, but none of them were able to support the hypotheses. The findings in this study are unable to support the claim that an increase of non-alcoholic advertisements have a negative effect on alcohol consumption, nor are they able to confirm a mediating effect of social norm on this relationship. There is no evidence for the claim that non-alcoholic advertisements influence social norm either, in fact there was no significant difference between the non-alcoholic condition and the alcoholic condition of the study. Participants who were subjected to the non-alcoholic version of the study were not significantly influenced by it when it came to social norm and alcohol consumption. This is not to say that the relationship between the non-alcoholic advertisements and alcohol consumption with a mediating effect of social norm is non-existent. It is merely to say that in this current study we were unable to provide any evidence for the existence of the relationship.

However, this study did find some significant effects of our controlling variables on alcohol consumption itself. Age, educational level and peer social norms have given us some significant p values, as discussed previously in the results section of this paper. This leads us to believe that the data collected was not entirely out of order. The first controlling variable that provided positively related scores was age. In the stepwise linear regression analysis where future alcohol consumption was used to measure alcohol consumption, variable age revealed to be positively related ($\beta = 0.348$, $p = 0.026$). Thus, the effect of age measured in this study can confirm what previous research has shown about age and alcohol consumption; alcohol consumption is positively related with age. More specifically future alcohol consumption is likely to increase with the increase of age. The current studies' results provide additional evidence to believe that youths in their later adolescents, 16 -20, have higher alcohol consumption levels than those in their early adolescents (Brown, et al., 2009; Covell, 1992). Since the age cutoff in this study was 17 and the study was not designed to measure the exact effect of age on alcohol consumption, results are not adequate enough to speak for the positive relationship between alcohol consumption and ages above 17. Ages above 17, 18 and up, may present a different relationship with alcohol consumption due to the fact that alcohol consumption becomes legally permitted behavior. Once adolescents reach the age of 18, alcohol consumption is no longer considered illegal. Whether or not legality of alcohol consumption influences the relationship between age and alcohol consumption must be considered for future research.

With regard to the independent variable of non-alcoholic advertisements used in this linear regression analysis, future research is highly recommended to narrow down the interaction of non-alcohol advertisements and age. In condition A, the alcoholic advertisements condition, variable age seems to have a positively significant effect on future alcohol consumption ($\beta = 0.348$, $p = 0.026$). In condition B, the non-alcoholic advertisement condition, variable age does not measure to have a positively significant effect on future alcohol consumption, in fact age does not have any significant effect ($\beta = 0.045$, $p = 0.777$). Thus, from this output it is unfeasible to determine the relationship between non-alcoholic advertisements, age and alcohol consumption. Opportunities for additional research are found in the field of non-alcoholic advertisements. Additional research in this field can be beneficial for companies trying to advertise their non-alcoholic products, as well as for policy makers aiming to reduce underage alcohol consumption.

In the same linear regression analysis on the relationship between non-alcoholic advertisements and alcohol consumption, a significant negative effect was found for the controlling variable 'sex' ($\beta = -0.441, p = 0.008$). Males are quantified as 0 and females as 1, the context for the negativity of the effect lies in the difference in sex. This means that if sex goes down in digit, e.g. 1- female to 0- male, the effect of non-alcoholic advertisements on alcohol consumption is less. The output signifies that males are less influenced by non-alcoholic advertisements than females are. This outcome aligns with the gendered effect of advertising attractiveness found in previous research (Covell, 1992; Waiters, Treno, & Grube, 2001). Females have shown to be positively influenced by advertisements presenting desirable lifestyle aspects, in this study that would be the non-alcoholic advertisement advocating for inclusivity and appropriateness.

5.2 Limitations and future research

This study has undoubtedly several limitations to it, because we were unable to confirm any of the hypotheses. Since there have been so many other studies done on similar topics, that have had successful outcomes, it seems to be this studies' limitations that have obstructed the analysis. Several limitations come to mind; an undersized sample, inaccurate responses from adolescents and topics that might still be considered taboo.

Undersized sample

In this study we had a total respondent number of 125, from which we had to exclude 44 responses due to missing variables. This left us with a sample of 81 respondents. Ideally this research would have wanted to have at least 100 usable responses. Unfortunately, we were unable to gather enough data to fill out a sample size of 100. In future research it would certainly be recommended to gather more than 81 responses.

Biased responses

Because of the online nature this questionnaire was completed through, respondents may have had the feeling of aversion to answer accurately. It is possible that the respondents may not have felt encouraged to provide accurate, honest answers, because it was a quick survey that was optional for them to take. Web surveys tend to suffer from methodological problems that can seriously affect the quality of outcome (Bethlehem, 2008). Self-reflection of respondents leads to a lack of representativity and thus to biased respondents according to Bethlehem. Self-reflection of respondents can be distorted from real life evidence. Bethlehem found that the bias in self-reflection can be more than 13 times as large in the worst-case situation (2008). Bethlehem goes on to suggest that in order to help reduce the bias, reference studies can be used as a mean to measure activities of respondents and attitudinal lifestyle variables.

Authority figures

For those who received the questionnaire link through a school email, the factor of authority could have influenced the responses. Porter (2004b) found that people are more likely to accurately respond to survey requests from authority figures when directly approached. When authority figures request responses, respondents are more likely to respond with desirable answers that would not present themselves in an unfavorable manner (Porter, 2004a). Socially desirable responses can cause problems of accuracy in answers (Paunonen & LeBel, 2012). Students may have felt obliged to answer in a socially desirable way because their 'real' accurate answer could have gotten them into trouble with authority, their teacher in this case. This social desirability bias (SDB) can interfere with the representation of actual behaviors. To solve socially desirable biases the most common solutions are making the survey online, anonymous with neutral questions. All these aspects were applied to the current study, yet SDB could have been of influence. Some research done in 2019 proposed that by actually using SDB as a controlling variable, the bias could

be reduced (Larson, 2019). This is however, still up for debate and is seen as a controversial solution. Additional research on this possible solution for socially desirable bias is therefore highly necessary.

Taboo topic

Because of the prohibition of underage drinking, students admitting to indulging in this behavior may have felt uncomfortable to tell the truth. Illegal behavior, what underage drinking still is, can be seen as a taboo topic. Taboo topics are topics that are rarely openly talked about because it is considered as shameless, undesirable behavior. Illegally consuming alcohol could be considered as a taboo topic because it is behavior that is not praised by authority. (Honesty, Seymour, & Webster, 2000) Honesty, et al. argue that the stigma surrounding underage alcohol consumption should not be ignored but should be openly discussed in order to minimize the stigmatizing effect of the topic. The stigma surrounding underage alcohol consumption could have had an influence on the findings of this paper and should therefore not be left unconsidered. Some might even go as far as to say that it would be problematic to not research taboo topics (Evans, Avery, & Pederson, 2000). For future research the recommendation would be to continue frequently bringing up taboo topics in order to destigmatize the subject matter.

Gendered effect

Although a significant effect was found for gender on the relationship between non-alcoholic advertisements and alcohol consumption was found, limitations exist. One of the main limitations is the skewed frequency of females in this research (Female N= 60, Male N= 20). The imbalance of gender could have had an effect on the results found for gender. In order to correct this imbalance, more male respondents would be recommended. Another solution is to cut down the female respondents to the same level of 20. However, this would make our sample size significantly smaller, which is unfavorable as well. The recommendation for future research would therefore be obtaining equally sized groups of female and male respondents.

Another limitation concerning gender is the design of the advertisements. There is evidence for gendered preferences of advertising designs. Females tend to prefer images of desirable lifestyle advertisements, while males tend to be attracted to advertisements featuring sports (Waiters, Treno, & Grube, 2001). Since the advertisement did not include any sports features, it is probable to say that the attractiveness of the ad was less for males. A solution for this potential gendered effect of advertisement design, is to include one advertisement designed specifically for males and one advertisement designed for females, as to equally appeal to both genders.

Advertisement design

While on the topic of advertisement design, another limitation comes to mind. In this study 3 real ads and 1 fake advertisement were presented. The two Heineken advertisements presented actual existing products, while one of the Smirnoff advertisements was constructed for a non-existing product; non-distilled vodka by Smirnoff. The lack of authenticity could have influenced the respondents' genuine intent to consume. Answers considering the non-alcoholic advertisement of spirits can therefore be erroneous. The reason behind utilizing the false advertisement was the lack of other options. As of today, there are no companies who both produce distilled spirits and non-distilled spirits. In future this might change, which could lead to better opportunities for accurately testing the effect of non-alcoholic spirit advertisements.

Regulations concerning alcohol advertisements

Following advertising regulations for alcoholic beverages, it is illegal for alcoholic brands to advertise their products to underage consumers (National Research Council (US) and Institute of Medicine (US), 2004). Although the advertisements are still effective when it comes to underage

consumption, regularities prevent companies from designing specific youth advertisements that could further increase sales. The non-alcoholic branch does not have to comply with these regulations. Non-alcoholic brands do not need to include disclaimers or warnings about consumption that could scare consumers away. As a matter of fact, non-alcoholic advertisements can be specifically designed to fit adolescents' desires. Regulatory barriers that exist in (social) media for alcohol do not impact non-alcoholic advertisements, which can be seen as a major advantage (Crowley, 2020). This advantage includes the ability to having a freer, more flexible approach to advertising, that can open doors for creativity, storytelling and made to fit advertisements, e.g. advertisements made to fit adolescents' desires. It is expected that the increase of marketing advantages will lead to an increase in consumption itself given that advertising effectiveness has been linked with increasing sales (Anderson, et al., 2009, Garfield & Chung, 2003, Jones & Magee, 2011). It will be interesting to see in this expected increase of non-alcoholic advertisements advantages will indeed lead to an increase of non-alcoholic beverage sales. This subject is an interesting matter for future research.

5.3 Conclusion

Since this current study was unable to provide any evidence for our hypothesis, our research question:

Will non-alcoholic advertisements lead to a decrease of the positive social norm towards alcohol consumption, which in turn results in decreasing alcohol consumption?

The question has to be answered with an indefinite answer. In this current research we have no supporting evidence to answer the question with a yes. In spite of this, other studies have shown that a relationship between at least some of the variables has been established before. In order to be able to provide further proof, future research is highly recommended at this point in time. For future research, the limitations of this current study have to be kept in mind and need to be accounted for. Studying the relationship between non-alcoholic advertisements and alcohol consumption itself can be beneficial for the short-term alteration of consumption levels. If we want to look at long-term solutions for underage drinking, it is recommended to take social norm into consideration. Despite the lack of evidence found in this current research, the topics discussed are still considered valuable and necessary. The remaining fact is that alcohol consumption is highly detrimental for adolescent brains but also for social networks, parental and peer relationships and social norm. Public policies based on research regarding alcohol consumption behaviors amongst adolescents could help decrease the detrimental effect of underage alcohol consumption. In order to shape and improve these public policies even more additional research is necessary. In short, research on the topic of non-alcoholic advertisements, social norm regarding alcohol consumption and alcohol consumption amongst adolescents remains highly valuable and compulsory when looking at improving the well-being of adolescents.

Bibliography

- Advertising Age. (1999). Advertising Age. Sales per ad dollar by most advertised segments. From Adage.com: adage.com
- Aitken, P. P. (1989). Television alcohol commercials and under-age drinking. *International Journal of Advertising*, 8, 133-150.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology*, 32(4), 665-683.
- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Ajzen, I., & Fishbein, M. (2000). Attitudes and the Attitude-Behavior Relation: Reasoned and Automatic Processes. *European Review of Social Psychology*, 11(1), 1-33.
- Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., & Radosevich, M. (1979). Social learning and deviant behavior: a specific test of a general theory. *American Sociological Review*, 44(4), 636-655.
- Anderson, P., de Bruijn, A., & Angus, K. (2009). Impact of alcohol advertising and media exposure on adolescent alcohol use: a systematic review of longitudinal studies. *Alcohol and Alcoholism*, 44(3), 229-243.
- Asare, M. (2015). Using the Theory of Planned Behavior to determine the condom use behavior among College Students. *American Journal of Health Studies*, 30(1), 43-50.
- Atkin, C. K., & Block, M. (1983). Effectiveness of celebrity endorsers. *Journal of Advertising Research*, 23, 57-61.
- Austin, E., & Knaus, C. (2000). Predicting the potential for risky behavior among those 'too young' to drink as a result of appealing advertising. *Journal of Health Communication*, 5, 13-27.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Belasen, A., & Hafer, R. W. (2013). IQ and alcohol consumption: International data. *Intelligence*, 41(5), 615-621.
- Borsari, B., & Carey, K. (2003). Descriptive and injunctive norms in college drinking: a meta-analytic integration. *Journal of Studies on Alcohol and Drugs*; 64, 331-341.
- Borsari, B., & Carey, K. B. (2001). Peer Influences on College Drinking: A review of the Research. *Journal of Substance Abuse*, 13(4), 391-424.
- Brown, S. A., McGue, M., Maggs, J., Schulenberg, J., Hingson, R., Swartzwelder, S., Murphy, S. (2009). Underage alcohol use summary of developmental processes and mechanisms: ages 16-20. *Journal of Alcohol research & Health: the journal of the National Institute on Alcohol Abuse and Alcoholism*, 32(1), 41-52.
- Cannon, J. (2016, July 13). We all want to fit in. From Psychology Today: <https://www.psychologytoday.com/us/blog/brainstorm/201607/we-all-want-fit-in>
- Carruthers, P. (2018). Implicit versus Explicit Attitudes: Differing Manifestations of the Same Representational Structures? *The Review of Philosophy and Psychology*, 9(51), 51-72.
- CBS. (2017, 03 20). CBS Statline. From CBS StatLine: <https://opendata.cbs.nl/statline/#/CBS/en/dataset/03799ENG/barv?ts=1583101255055&fromstatweb=true>
- Center on Alcohol Marketing and Youth. (2010). *Youth Exposure to Alcohol Advertising on Television, 2001–2009*. Washington D.C.: Center on Alcohol Marketing and Youth.

- Chen, M. J., & Grube, J. W. (2002). TV beer and soft drink advertising: what young people like and what effects? *Alcoholism, clinical and experimental research*, 26, 900-906.
- Chen, M. J., Grube, J. W., Bersamin, M., Waiters, E., & Keefe, D. B. (2005). Alcohol Advertising: What Makes it Attractive to Youth? *Journal of Health Communication*, 10, 553-565.
- Chen, M., Grube, J., & Bersamin, M. (2005). Alcohol Advertising: what makes it Attractive to Youth? *Journal of Health Communications*, 10(6), 553-565.
- Cherry, K. (2020, May 3). Attitudes and Behavior in Psychology. From Very Well mind: Social Psychology: <https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897>
- Cialdini, R., Kallgren, C., & Reno, R. (1991). A focus theory of normative conduct: A theoretical refinement and re-evaluation of the role of norms in human behaviors. *Advances in Experimental Social Psychology*, 24, 201-234.
- Clark, D. B., Thatcher, D. L., & Tapert, S. F. (2008). Alcohol, Psychological Dysregulation, and Adolescent Brain Development. *Alcoholism: Clinical and Experimental Research*, 32, 375-385.
- Courtney, K. E., & Polich, J. (2009). Binge drinking in young adults: Data, definitions, and determinants. *Psychological Bulletin*, 135(1), 142-156.
- Covell, K. (1992). The appeal of image advertisements: Age, gender and product differences. *Journal of Early adolescence*, 12, 46-60.
- Cox, M., & Bates, C. (2011). Referent Group Proximity, Social Norms, and Context: Alcohol Use in a Low-Use Environment. *Journal of American College Health*, 59(4), 252-259.
- Currie, C., Roberts, C., Settertobulte, W., Morgan, A., Smith, R., Samdal, O., . . . World Health Organization. (2004). *Health Behaviour in School-Aged Children (HBSC) Study: International Report from the 2001/2002 Survey*. Copenhagen: WHO Regional Office for Europe.
- Devos, T. (2008). Implicit attitudes 101: Theoretical and empirical Insights. *Psychology Press*, 61-84.
- Dixon, M. A., & Chartier, K. G. (2016). Alcohol Use Patterns among Urban and Rural Residents: Demographic and Social Influences. *Alcohol research: current reviews*, 38(1), 69-77.
- Feldstein Ewing, S. W., Blakemore, S., & Sakhardande, A. (2014). The effect of alcohol consumption on the adolescent brain: A systematic review of MRI and fMRI studies of alcohol-using youth. *NeuroImage: Clinical*, 5, 420-437.
- Festinger, L. (1950). Informal social communication. *Psychological Review*, 57(5), 271-282.
- Garfield, C. F., Chung, P. J., & Rathouz, P. J. (2003). Alcohol Advertising in Magazines and Youth Readership. *Journal of the American Medical Association*, 289(19), 2424-2429.
- Garfield, C., & Chung, P. (2003). Alcohol Advertising in Magazines and Adolescent Readership. *JAMA*, 289(18), 2424-2429.
- GGD IJsselland. (2011). *Factsheet alcoholconsumption 2011 Region IJsselland/Raalte*. Zwolle: GGD IJsselland.
- Gliksmann, L., Newton-Taylor, B., Adalf, E., & Giesbrecht, N. (1997). Alcohol and other drug use by Ontario university students: The role of gender, age, year of study, academic grades, place of residence and programme of study. *Education, Prevention and Policy*, 4(2), 117-129.
- Godin, G., Valois, P., & Lepage, L. (1993). The pattern of influence of perceived behavioral control upon exercising behavior: an application of Ajzen's theory of planned behavior. *Journal of Behavioral Medicine*, 16, 81-102.
- Haddock, G., & Maio, G. R. (2004). *Contemporary perspectives on the psychology of attitudes*. New York: Psychology Press.
- Hansen, J., & Wänke, M. (2009). Liking What's Familiar: The Importance of Unconscious Familiarity in the Mere-Exposure Effect. *Journal of Social Cognition*, 27(2), 161-182.
- Hayes, A. F. (2017). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. Guilford Publications.
- Hogg, M. A., & Reid, S. A. (2006). Social identity, self-categorization, and the communication of group norms. *Communication Theory*, 16(1), 7-30.

- IWSR. (2019, February). Global Low-and No-Alcohol Strategic Study. From The IWSR: <https://www.theiwsr.com/global-low-and-no-alcohol-strategic-study/>
- Jacobus, J., Squeglia, L. M., Bava, S., & Tapert, S. F. (2013). White matter characterization of adolescent binge drinking with and without co-occurring marijuana use: a 3-year investigation. *Psychiatry Research*, 214(3), 374-381.
- Jamison, J., & Myers, L. B. (2008). Peer-Group and Price Influence Students Drinking along with Planned Behaviour. *Alcohol and Alcoholism*, 43(4), 492-497.
- Jemmott, J. B., Jemmott, L. S., & Hacker, C. I. (1992). Predicting intentions to use condoms among AfricanAmerican adolescents: the theory of planned behavior as a model of HTV risk-associated behavior. *Ethnicity and Disease*, 2, 371-380.
- Jernigan, D., Ostroff, J., & Ross, C. (2005). Alcohol advertising and youth: a measured approach. *Journal of Public Health Policy*, 26, 321-325.
- John Hopkins Bloomberg school of public health. (2007, April). Alcohol Advertising and Youth. From Center on Alcohol Marketing and Youth: <http://www.camy.org/resources/fact-sheets/alcohol-advertising-and-youth/>
- Jones, S. C., & Magee, C. A. (2011). Exposure to Alcohol Advertising and Alcohol Consumption among Australian Adolescents. *Alcohol and Alcoholism*, 46(5), 630-637.
- Judd, C. M., Kenny, D. A., & McClelland, G. H. (2001). Estimating and testing mediation and moderation in within-subject designs. *Psychological Methods*, 6(2), 115-134.
- Kirmani, A. (1990). The effect of Perceived Advertising costs on Brand Perceptions. *Journal of Consumer Research*, 17(2), 160-171.
- Koordeman, R., Anschutz, D. J., van Baaren, R. B., & Engels, R. C. (2010). Effects of alcohol portrayals in movies on actual alcohol consumption: an observational experimental study. *Society for the Study of Addiction*(106), 547-554.
- Kraus, L., Room, R., Livingston, M., Pennay, A., Holmes, J., & Törrönen, J. (2019, July 7). Long waves of consumption or a unique social generation? Exploring recent declines in youth drinking. *Addiction Research & Theory*.
- Kuntsche, E., & Gmel, G. (2013, July 25). Alcohol consumption in late adolescence and early adulthood – where is the problem? *Swiss Medical Weekly*, pp. 1-10.
- La Vecchia, C., Bosetti, C., Bertuccio, P., Castro, C., Pelucchi, C., & Negri, E. (2014). Trends in alcohol consumption in Europe and their impact on major alcohol-related cancers. *European Journal of Cancer Prevention*, 23(4), 319-322.
- Lewis-Beck, M., Bryman, A., & Futing Liao, T. (2004). Cover Story. *The SAGE encyclopedia of social science research methods*, 1-0.
- Miller, D., & Prentice, D. (1996). The construction of social norms and standards. In F. Higgins, & A. Kruglanski, *Social Psychology: Handbook of basic principles* (pp. 799-829). New York: Guilford.
- Montaya, A. K. (2019). Moderation analysis in two-instance repeated measures designs: Probing methods and multiple moderator models. *Behavior research methods*, 51(1), 61-82.
- Mullen, B., & Hu, L. (1988). Social projection as a function of Cognitive Mechanisms: Two meta-analytic integrations. *British Journal of Social Psychology*, 27, 333-356.
- Müller, M., Kowalewski, R., Metzler, S., Stettbacher, A., Rössler, W., & Vetter, S. (2013). Associations between IQ and alcohol consumption in a population of young males: a large database analysis. *Social Psychiatry and Psychiatric Epidemiology*, 48, 1993-2005.
- National Geographic. (2016, 08 16). Were Humans Built to Drink Alcohol? National Geographic.
- National Institute on Alcohol Abuse and Alcoholism. (2004, winter). National Institute on Alcohol Abuse and Alcoholism Council approves definition of binge drinking. From NIAAA Newsletter 3: https://pubs.niaaa.nih.gov/publications/Newsletter/winter2004/Newsletter_Number3.htm
- Nolen-Hoekstra, S. (2013). Gender Differences. In *Comprehensive Addictive Behaviors and Disorders: Principles of Addiction* (Vol. 1, pp. 141-147). New Haven, USA: Academic Press Yale University.

- Oostveen, T., Knibbe, R., & de Vries, H. (1996). (Oostveen, Knibbe, & De Vries, Social influences on young adults' alcohol consumption: Norms, modeling, pressure, socializing, and conformity. *Addictive Behaviors*, 21(2), 187-197.
- Oostveen, T., Knibbe, R., & De Vries, H. (1996). Social influences on young adults' alcohol consumption: Norms, modeling, pressure, socializing, and conformity. *Addictive Behaviors*, 21(2), 187-197.
- Osterberg, E., Room, R., Ramstedt, M., & Rehm, J. (2009). Explaining change and stasis in alcohol consumption. *Addiction Research & Theory*, 17(6), 562-576.
- Parry, C., Rehm, J., Poznyak, V., & Room, R. (2009). Alcohol and infectious diseases: are there causal linkages? *Journal of Addiction*, 104, 331-332.
- Perugini, M. (2010). Predictive models of implicit and explicit attitudes. *British Journal of Social Psychology*, 44(1), 29-45.
- Prentice, D. A. (1991). Norms, Prescriptive and Descriptive. *Encyclopedia of Social Psychology*, 630.
- Psychology IResearch net. (2020, July 17). Social Psychology: Attitudes. From Psychology Researchnet: <http://psychology.iresearchnet.com/social-psychology/attitudes/>
- Rehm, J., & Parry, C. (2009). Alcohol consumption and infectious diseases in South Africa. *The Lancet*, 374(9707), 2053.
- RIVM. (2006). Veel steden maken nog geen Randstad. Den Hague: Ruimtelijk Planbureau.
- Roek, M. A., Poelen, R., Lemmers, E. P., & Engels, R. C. (2010). The unique contribution of attitudes toward non-alcoholic drinks to the prediction of adolescents' and young adults' alcohol consumption. *Addictive Behaviors*, 35, 651-654.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attributional processes. *Advances in Experimental Social Psychology*, 10, 174-221.
- Skorupa, P. (2014). Shocking contents in social and commercial advertising. *Creativity Studies*, 7(2), 69-81.
- Spijkerman, R., Van den Eijnden, M., Overbeek, G., & Engels, E. (2007). The impact of peer and parental norms and behavior on adolescent drinking: The role of drinker prototypes. *Psychology & Health*, 22(1), 7-29.
- Statista Research Department. (2015, June 15). Advertising spending as percent of sales in the distilled and blended liquor industry in the United States from 2011 to 2015. From Statista: <https://www.statista.com/statistics/470961/ad-spend-to-sales-distilled-and-blended-liquor-usa/>
- Sudhinaraset, M., Wigglesworth, C., & Takeuchi, D. T. (2016). Social and Cultural Contexts of Alcohol Use: Influences in a Social-Ecological Framework. *Alcohol research: current reviews*, 38(1), 35-45.
- Tapert, S. F., Caldwell, L., & Burke, C. (2004/2005). Alcohol and the Adolescent Brain; *Human Studies. Alcohol Research Health*, 28(4), 205-212.
- Telzer, E. H., van Hoorn, J., Rogers, C. R., & Do, K. T. (2018). Chapter Seven - Social Influence on Positive Youth Development: A Developmental Neuroscience Perspective. *Advances in Child Development and Behavior*, 54, 215-258.
- Thoma, V., & Williams, A. (2013). The devil you know: The effect of brand recognition and product ratings on consumer choice. *Judgement and Decision Making*, 8, 34-44.
- Turner, J. C. (1991). Mapping social psychology series: Social influence. Thomson Brooks/Cole Publishin Co.
- Turrisi, R., Mastroleo, N. R., Mallett, K. A., Larimer, M. E., & Kilmer, J. R. (2007). Examination of the Mediatlional Influences of Peer Norms, Environmental Influences, and Parent Communications on Heavy Drinking in Athletes and Nonathletes. *Psychology of Addictive Behaviors*, 21(4), 453-461.
- Van Dorsselaer, S., De Looze, M., Vermeulen-Smit, E., De Roos, S., Verdurmen, J., & Ter Bogt, T. (2009). Gezondheid, Welzijn en Opvoeding van Jongeren in Nederland [Health, Welbeing, and Parenting of Youth in the Netherlands]. Utrecht: HBSC-Study.

- Vargas, P. T. (2004). The relationship between implicit attitudes and behavior. In G. Haddock, & G. R. Maio, *Contemporary Perspectives on the Psychology of Attitudes* (pp. 275-297). Psychology Press.
- Walters, E. D., Treno, A. J., & Grube, J. W. (2001). Alcohol advertising and youth: A focusgroup analysis of what young people find appealing in alcohol advertising. *Contemporary Drug Problem*, 28, 695-718.
- Wechsler, H., Dowdall, G. W., Davenport, A., & Castillo, S. (1995). Correlates of College Students Binge Drinking. *American Journal of Public Health*, 85(7), 921-926.
- World Health Organization. (2008). *The global burden of disease: 2004 update*. Geneva: WHO Library Cataloguing-in-Publication Data.
- Zimmerman, I. (2012, October 17). Implicit Attitudes Predict Impulsive Behavior. From Psychology Today: <https://www.psychologytoday.com/us/blog/sold/201210/implicit-attitudes-predict-impulsive-behavior>