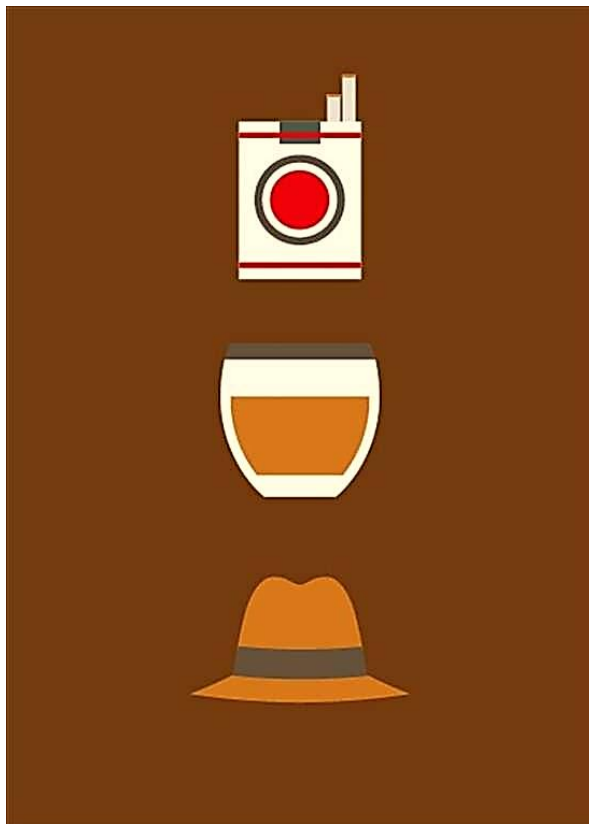


Let's give it a shot! Purchasing age restricted products as a minor, a lucky strike?

Research into the determinants of vendors' (non-)compliance with legal age restrictions on alcohol, tobacco and lottery products.



Thomas S. Zoetman (s1298909)

18th of December, 2015

Master Thesis

Corporate Communication Studies

UNIVERSITY OF TWENTE.

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MASTER THESIS

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ABSTRACT

Aims The study examined the determinants of (non)-compliance to the legal age limits for the sale of alcohol, tobacco and gambling products in supermarkets. To examine these determinants a new measurement instrument for compliance was proposed.

Design The instrument was formed of 17 determinants, which were based on the 'Table of Eleven' and other prevalent compliance relating scientific literature. After a reliability analysis, 12 constructs were consistent enough to analyze further.

Setting Data was collected in the form of a survey from supermarkets in the Netherlands in the regions Twente and Amsterdam. **Participants** 250 supermarket vendors who work in Dutch supermarkets as cashier and/or counter employee responded to the survey. **Measurements** The self-reported compliance rate of the vendors; constructs relating to the ability, knowledge and motivation to comply; general characteristics of the vendors. **Analysis** One-sample t-tests were performed to assess the extent to which the allocated scores of the compliance factors deviated from the median value. An ANOVA test was used to analyze the differences and similarities between the three product groups. A hierarchical multiple regression analyses was conducted to examine relationships between the self-reported compliance and the factors and motivations of (non)-compliance. A Cronbach's Alpha and correlation analysis was conducted in order to test the efficacy of the proposed framework and measurement instrument. **Findings** The strongest relating determinants of self-reported compliance are the 'familiarity with rules', 'perceived legal basis', 'personal acceptance' and 'attitude towards norms'. The extent of influence of the determinants of compliance are similar between alcohol and tobacco and are perceived extremely high, however the compliance with age limits on gambling products is deemed of less importance, although the scores are still high. In general, the responding vendor's state that they are able, willing and they have the knowledge to comply. **Conclusions** The research offers an update to the existing theory and measurement instruments regarding the determinants of compliance. In order to increase compliance rates, policymakers and supermarket management should allocate the most effort to the education of vendors to optimize the determinants 'familiarity with rules', 'perceived legal basis', 'personal acceptance' and 'attitude towards norms'.

Keywords Alcohol, tobacco, lottery, compliance, prevention, minors, ability, knowledge, motivation, enforcement, regulation, education

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1. Introduction

The use of alcohol, tobacco and lottery products among adolescents is a well discussed topic in our society, due to the potential problems these products can provoke. Despite the fact that the harmfulness of these products are widely acknowledged, a lot of adolescents still drink alcohol, smoke tobacco and gamble and are running into the problems caused by the use of these products. The use and the risk these products cause to youngsters are further discussed in the next section.

1.1 Alcohol

Consumption of alcohol can harm the physical and mental development of youngsters and can lead to addiction (Monti, Miranda, Nixon, Sher, Swartzwelder, Tapert & Crews, 2005), crime and disruption of public order (Macdonald, Cherpitel, Borges, De Souza, Giesbrecht & Stockwell, 2005) and traffic accidents (Sindelar, Barnett & Spirito, 2004). In 2014, drinking among adolescents resulted in 783 alcohol-related hospitalizations and 87% of the cases were related to alcohol intoxication (Lely, Clerk, van Hoof & van Dalen, 2015). The social problem of alcohol use among youngsters is stressed by research which shows that 33% of the Dutch minors between 12 and 17 years drinks alcohol and 10% of them are heavy drinkers (Statistics Netherlands [CBS], 2014).

1.2 Tobacco

The harmfulness of smoking tobacco is widely understood, and includes the knowledge that nicotine effects human affective functions and can lead to heavy and long-standing cases of addiction. Furthermore, smoking tobacco can cause acute health problems, such as pneumonia, and chronic health problems, such as bronchitis and emphysema (Auerbach, Cuyler, Hammond, Garfinkel & Benante, 1972) and in severe cases it can even lead to lung cancer (Peto, Zatonski, Boreham, Jarvis & Lopez, 2006; Hofhuis, De Jongste & Merkus, 2015). Research shows that half of smokers will eventually die from the consequences of smoking (Robbins, Manson, Lee, Sattersfield & Hennekens, 1994). In examining smoking among adolescents, nearly 21% of 12- to 25-year olds in the Netherlands indicated they have smoked tobacco, and 16% of people aged 10 to 19 years smoke regularly, including 9% of them on a daily basis (CBS, 2013). Additionally, further research in the Netherlands shows that 5% of the 14/15 year olds smoke regularly, while 15% have smoked in the last year. In the 16/17 age group, 29% have smoked that year, and 15% smoke regularly (Intraval, 2014).

1.3 Lottery products

While public attention towards the use of scratch cards and lottery tickets among adolescents is less prevalent compared to alcohol and tobacco, it remains widely understood that gambling has harmful impacts on adolescents as well. Problems related to gambling include addiction, as well as financial, physical, behavioral and social related problems (Petro, 2013; Magoon, Gupta & Derevensky, 2005). Parallel with the less prevalence of public attention, less research about gambling among minors is available. However, the '1V Youth Panel' (2013) (which is a nationwide research panel associating to the news program Eénvandaag broadcasted by the Dutch Broadcast Organization [NPO]) conducted online research, investigating gambling among young people between 12 and 24 years and found that 36% of this group had recently purchased a scratch card or lottery ticket. Among these respondents, 18% participated in a lottery while under the age of 16 years old. Overall, 27% of the respondents were younger than the age of 18 when they participated in a lottery for the first time. Additionally, the Municipal Health Service Den Haag [GGD] (2003) found that 33% of The Hague pupils of secondary education have purchased scratch cards and 10% of this group had recently purchased one.

1.4 Availability of risky products

As depicted in the above studies and statistics, these risky products are still widely used among youngsters, which has direct detrimental impacts on society. Prevention is essential in order to address the problem, and therefore insight into the determining factors of use is needed for effective prevention. The availability is one of the most important determinants for the use of an age restricted product among adolescents (Gosselt, 2011). Availability is defined as the "degree to which something is at hand when needed", (Van Hoof, 2010). Research has shown that the availability of alcohol encourages young people to start drinking and a study by Gilligan, Kuntsche and Gmel (2012) concluded that when less of the risky product is available through stricter control, the use is less amongst adolescents. The availability can be differentiated into four kinds: legal, physical, social and economic availability (Van Hoof, 2010). Several measures are aimed at the production, promotion, accessibility and sale of the risky products by the government in the Netherlands (Cnossen, Forrest & Smith, 2009) and these measures are strongly related to the four types of availability.

Regarding the economic availability, which is defined by Van Hoof (2010) as "the relationship between alcohol use and the prices of alcohol, which involves structural and

incidental increases and decreases in the price of alcoholic beverages and/or government taxes", taxes on alcohol, tobacco and gambling are raised by the state, which is in accordance with research of Cnossen, Forrest & Smith (2009) who state that high taxes are effective in reducing the use of tobacco, alcohol and gambling by children and adolescents.

The 'legal availability' is determined by the current legislation and laws concerning the use and includes the compliance of age limits (Van Hoof, 2010). Regulation established by government has set the age restriction to a minimum age of 18 years for the sale of alcohol, tobacco and lottery products. For these three products, the following laws are currently enforced; (1) the 'Alcohol and Hospitality Law', (2) the 'Tobacco Law' and (3) the 'Law on Gambling'. Across these three regulations, a consistent legal age restriction has been set by the government (Alcohol and Hospitality Law; Article 20, Tobacco Law; Article 8, Law on Gambling; Article 20): "It is prohibited commercially or otherwise to provide such a product (alcoholic beverages, tobacco, gambling products) to a person who is not determined to have reached the age of 18 years". In addition, a self-regulating system has been implemented by the Central Bureau of Grocery's [CBL] who require the cashiers of the Dutch grocery stores to check and determine the age of any potential buyer who looks under 25 years old.

The 'social availability' is associated with the presence and norms and values concerning the risky product in a persons' network (Grunewald, Ponicki & Holder, 1993). In order to decrease the social availability of the risky products and to create additional public support and promote compliance with the measures, governmental actions are often combined with awareness programs (Kleinjan & Engels, 2010). With an aim to create further public awareness of the harmfulness of alcohol and tobacco, the Ministry of Health, Welfare and Sport (and many partners) has introduced a national prevention program for alcohol and tobacco use (NIX18). The aim of the program is to strengthen the social norm "do not drink and smoke until your 18th". The program focuses on the whole Dutch society, in particular on the youth. In addition to the national campaign, the Trimbos Institute and the Public Health Services [GGD] are focusing directly on educators and their children with one-on-one educational activities (Ministry of Health, Welfare and Sport, 2015). Local education programs are generally based on the national awareness program and implemented by municipalities and the local Public Health Services. In addition, the program provides e-training to managers and vendors on how to proceed the alcohol and tobacco sales while complying with the prevention measures. Besides the awareness programs, because advertisements potentially effect

the social norm of risky products, the Dutch Advertising Code Authority sets rules for advertising alcohol, tobacco and lottery products. An important and notable limitation is that the advertising may not specifically target youngsters.

1.5 Compliance with Age Limits

(Legal) availability is a determining factor of alcohol-, tobacco-, and lottery products use, and therefore compliance with the age limits is crucial. The legal availability entirely depends on the compliance of sales personnel (Gosselt, Van Hoof & De Jong, 2012) and therefore vendors play a key role in compliance (Gosselt, Van Hoof, De Jong, Dorbeck-Jung & Steehouder, 2008). At the point of sale, the vendor determines the availability of an age restricted product to a minor; to comply or to not comply with the law and the vendors' compliance behavior is an important mediating factor for the purchase by adolescents because they determine the success or fail of purchase (Gosselt, Van Hoof & De Jong, 2012).

Despite the measures taken by several institutions, research shows that problems persist with the compliance with these legal age restrictions. Compliance with the age restriction on alcohol sales at Albert Heijn stores was 11% in 2015 (Van Hoof, Gosselt & De Jong, 2015). According tobacco sales, in the group of 16/17 year olds 14% have purchased tobacco. Of that group, 34% purchased the tobacco at the supermarket. Only 32% of them where asked for the identification and the success rate for over the counter purchase is 80% amongst 16-17 year olds and 47% amongst 14-15 year olds (Intraval, 2014). Non-compliance with legal age restrictions occurs most prevalently on sales of scratch cards and lottery tickets. A research investigation by Gosselt, Neefs, Van Hoof & Wagteveld (2013) with 100 mystery shopping attempts, found that that the compliance in off-premise outlets was 0% for both lottery tickets and scratch cards.

Contrary to the discussed poor compliance rates, the vendors evaluated their own compliance as excellent. In 2011 100% of employees in the food industry indicated that they comply with the instructions of alcohol sales and 80% of the stores in the same study state that they control their own staff (Intraval, 2012).

1.6 Research Question

As the compliance rate to the legal age restrictions is far from being 100%, it is important to investigate and determine why a vendor does not comply with these regulations. The perspective of the vendor has been chosen, as it is the vendor who complies or not at the point of sale, (Gosselt, Van Hoof & De Jong, 2012), and is therefore

a critical factor in the availability of the restricted products to minors. With a deeper understanding of the determining factors and motives of compliance, it is possible to develop more effective and targeted interventions and new support instruments which reinforce offense promoting factors and compliance facilitators. These instruments and interventions can serve as a tool to restrict the selling of the age restricted products to adolescents.

Differentiating from existing research, this research will include an extensive focus on key factors and motivations that are important in the sale of alcohol, tobacco and lottery tickets to adolescents, and it will examine the similarities and differences of compliance factors between the three product groups. Subsequently, this research will provide a deeper and wider understanding of the efficacy of compliance. In addition, a comprehensive range of dimensions that have a potential positive or negative relationship with the compliance with age limits will be investigated.

The research questions is formulated as follows:

'What are the determinants of vendors' (non-)compliance with legal age restrictions on alcohol, tobacco and lottery products?'

2. Theoretical background

The Dutch government protects citizens against the harmful impacts of alcohol, tobacco and gambling by the means of regulation. "In its most straight-forward sense, regulation refers to a set of authoritative rules accompanied by a mechanism, usually administered by a public agency, for monitoring and promoting compliance with those rules" (Johnstone & Sarre, 2004). The regulation is established by the government and specifically enforced by the 'Alcohol and Hospitality Law', 'Tobacco Law' and the 'Law on Gambling'. According to the availability of the risky products, the most determining component across these three regulations is the consistent age restriction of 18 years. To be effective, the law must satisfy a number of conditions, and it will only work if the norm addressees know the law, they want to use it and are also able to do that (Klein Haarhuis & Niemeijer, 2008). Therefore, the government has to rely on those that must comply with the rules. (Association of Dutch Municipalities [VNG], 2015). The effectiveness of the age restrictions depends on the actions taken by the government within the implementation of rules and the actual behavior of the vendor at the moment when compliance of the age limit is requested.

With an aim to develop a deeper understanding of the efficacy of compliance, three theories – from different perspectives- are discussed in the next sections. Firstly, from the perspective of the government, Reynolds' prevention model (2003) describes the critical factors of the prevention measurements the government has established. Secondly, from the perspective of the vendor the concept of Havinga (2003) is outlined, who found that compliance depends on the knowledge, ability and motivation of the executive actors (the vendors). Thirdly, the 'Table of Eleven' (2005) identifies 11 critical factors (dimensions) determining the successfulness of compliance. Finally, these three concepts are integrated in one overview in order to obtain a summary of the factors who influence and determine the respective strengths and weaknesses of the enforcement system.

2.1 Reynolds' Prevention Model

To counter the use of alcohol and tobacco among adolescents, and to reduce sales of these age restricted products to members of this group, the Dutch government has implemented a national awareness program (NIX18). The respective municipalities across the Netherlands are responsible for the regionally implementation of this

program. The framework for the regionally implementation is the “Handbook Healthy Municipalities” (National Institute for Health and Environment). The handbook is based on Reynolds’ prevention model (2003). Reynolds’ prevention model has three policy pillars: regulations, enforcement and public support. The pillars overlap each other (Figure 1.) and it is within this overlap that the integrated prevention takes place. Reynolds’ prevention model is based on Holder’s system theory (1998), which clearly states that use of a risky product is the result of a combination of factors, including the individual, the social environment, the availability and the influence of government. A description of the three pillars is given.

Regulations. The first pillar, regulations, relates to the legal framework surrounding the use of the restricted product. This legal framework is established at national level. Robust, feasible and clear regulations are the core of prevention programs (Dutch Institute for Alcohol Policy [STAP], 2010). Limiting the availability of alcohol has been proven to be the most effective prevention of alcohol use (World Health Organization [WHO], 2009). Establishing a legal age restriction is an example of reducing the availability of the risky product through regulation. Notably, the extent to which the law may affect the use of age restricted products among adolescents, depends on the degree to which this act is enforced and complied with (Reynolds, 2003).

Enforcement. The second pillar, enforcement, relates to the enforcement of policies. The prevention policy is ineffective without enforcement. The extent of enforcement depends on the severity, swiftness and certainty of penalties, as perceived by offenders (STAP, 2010). Media communication of awareness programs increase the effect of enforcement and it includes warning communication (perceived risk), reputation sanctions, educational communication and normative communication (Van Erp, 2007).

Education. The final pillar, education, aims to create and develop public support for the policy, because in addition to the commercial sales of the risky product, social resources have a major influence on the use among minors (Trimbos Institute, 2012). Through educating adolescents and retailers about the consequences of excessive use of the age restricted product, it aims to create a stronger social acceptance for the ethos behind the alcohol, tobacco and gambling policies. Greater acceptance of the alcohol, tobacco and gambling policies will further contribute to the subsequent compliance and effectiveness of these policies. Referring to Holder’s (2000) findings, effective awareness

programs include the training of retailers to enforce the compliance with underage sales laws ultimately prevent sale of the risky product to minors. Communication of the policy is essential in the education pillar and must include the three following stages to robustly create public support (1) Raising awareness, (2) increasing public knowledge, and (3) informing the public about the results of the policy (Gacsbaranyi & Mulder, 2007).

According to Reynolds' prevention model (2003), the combination of the described factors, leads to an effective policy. In conclusion, the policy should be based on (1) regulation; set the limit, (2) enforcement; guard the limit, and (3) public support; communicate the limit.

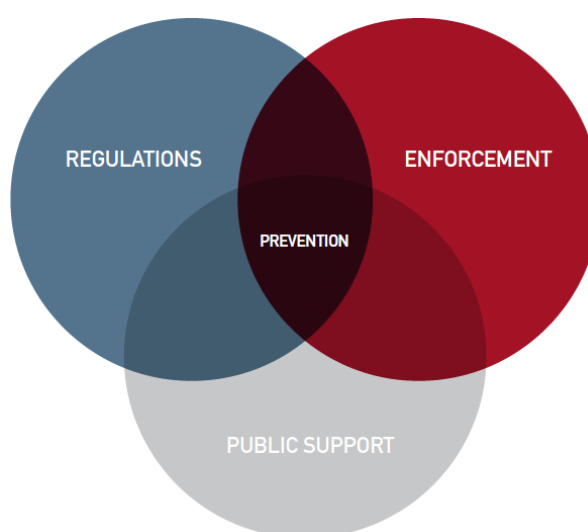


Figure 1. Reynolds' prevention model (Retrieved from: STAP, 2010)

2.2 Knowledge, ability and motivation

According to Havinga (2004), compliance depends on the knowledge, ability and motivation of the executive actors. In a practical sense: the respective vendors must know what regulations need to be enforced and why it is important, and further the vendors must be able and willing to follow the rules.

Knowledge of the regulation system is essential, because without knowledge of the law and without any instruction from management, conscious compliance on the part of vendors is impossible (Gosselt et al, 2008, p47). Whether vendors have knowledge of their controlling tasks, depends largely on whether they have been adequately informed. This in turn, depends on the extent to which the responsible managers are aware of their instructional duties. From the viewpoint of this study,

concerning the sales of age restricted products, the vendor must be aware of his/her rights and duties, which can then help the vendor to enforce the law appropriately.

The ability to comply is determined by the resources available to a vendor (Gosselt et al., 2008) and by the feasibility to comply with the rules (Parker, 2000). During the potential sale of age restricted products, a vendor must have the possibility to determine the age of a customer. While (electronic) age verification tools can help, adequate training may empower the vendor to comply with regulations at the point of sale of the restricted product.

The motivation involves acceptance for compliance. “It is impacted and determined by a number of factors, including: the relationship between self-interest and public interest, the interest of the vendor regarding non-compliance, the organizational structure of the sector, the effectiveness of enforcement and the attitude of the respective company towards the regulations” (Gosselt et al., 2008, p47). Effective motivations for compliance vary between persons and contexts, and there is a wide variety of motivations (Parker, 2000). The motivation of a vendor to comply the age limit results from intrinsic and/or extrinsic motivation. An example of intrinsic motivation of compliance may include that the vendor believes that young people should be protected against the respective age restricted product. An extrinsic motivation of compliance can be influenced by negative consequences such as penalties of non-compliance, or positive consequences of compliance through rewards.

2.3 The Table of Eleven

The ‘Table of Eleven’ has been developed by the Law Enforcement Expertise Centre of the Dutch Ministry of Justice [CCV] (2004) to identify the strengths and weaknesses of compliance and enforcement. The model attempts to answer why a vendor, at the point of sale, complies (or does not comply) with the legal age restrictions, and what the perception of enforcement is among vendors. The ‘Table of Eleven’ distinguishes eleven dimensions that together determine the degree of compliance with laws and regulations. These dimensions are summarized in Table 1. Two groups of dimensions are distinguished; spontaneous compliance dimensions and enforcement dimensions. *Spontaneous compliance dimensions* are factors that affect the incidence of voluntary compliance – that is, compliance that would occur in the absence of enforcement (Parker, 2000). Spontaneous compliance arises from intrinsic motivations. Enforcement

dimensions are forced and arise from extrinsic motivations and include all activities aimed at promoting compliance by means of laws and regulations, such as inspections and sanctions (CCV, 2004). The 11 dimensions are summarized in Table 1.

Table 1: Dimensions of the ‘Table of Eleven’

<i>Spontaneous Compliance</i>	<i>Enforcement Dimensions</i>
1. Knowledge of rules	6. Informal report probability
a. Familiarity with rules	7. Control probability
b. Clarity of rules	a. Administrative control
2. Cost-benefit considerations	b. Physical control
a. Financial-economic	8. Detection probability
b. Immaterial	a. Administrative detection
3. Level of acceptance	b. Physical detection
a. Acceptation policy	9. Selectivity
b. Acceptation efficacy policy	10. Sanction probability
(responsibility)	11. Sanction severity
4. Normative commitment	
a. Government authority	
b. Competing authority	
5. Informal control	
a. Social control	
b. Horizontal monitoring	

The ‘Table of Eleven’ provides a strong starting point for further research, as it contains eleven separate constructs and an extensive list of compliance related factors and motivations. These factors and motivations are defined by Parker (2004, p46) as:

1. Knowledge of rules: “Target group familiarity with laws and regulation, clarity (quality) of laws and regulations.”
2. Cost-benefit considerations: “Material and non-material advantages and disadvantages resulting from violating or observing regulation.”
3. Level of acceptance: “The extent to which the target group (generally) accepts policy, laws, and regulations.”
4. Normative commitment: “Innate willingness or habit of target group to comply with laws and regulations.”
5. Informal control: “Possibility that non-compliant behavior of the target group will be detected and disapproved of by third parties (i.e. non-government authorities), and the possibility and severity of sanctions that might be imposed by third parties (e.g. loss of customers/contractors, loss of reputation).”
6. Informal report probability: “The possibility that an offence may come to light other than during an official investigation and may be officially reported (whistle blowing).”

7. Control probability: “Likelihood of being subject to an administrative (paper) or substantive (physical) audit/inspection by official authorities.”
8. Detection probability: “Possibility of detection of an offence during an administrative audit or substantive investigation by official authorities. (The probability of uncovering non-compliance behavior when some kind of control is applied).”
9. Selectivity: “The (increased) chance of control and detection as a result of risk analysis and targeting firms, persons or areas (i.e. extent to which inspectors succeed in checking offenders more often than those who abide by the law).”
10. Sanction probability: “Possibility of a sanction being imposed if an offence has been detected through controls and criminal investigation.”
11. Sanction severity: “Severity and type of sanction and associated adverse effects caused by imposing sanctions e.g. loss of respect and reputation.”

2.4 Theory overview

Based on Reynolds’ prevention model, Havinga’s three factors and the ‘Table of Eleven’, the proposed overview of compliance in Table 2 depicts the intersection of these concepts. The efficacy of this overview is going to be tested in this research. The core proposition is that the overview provides a defined method which aids the design of targeted prevention interventions, which will dually reinforce offense promoting factors and compliance facilitators, and deliver the goal of preventing the sales of age restricted products to adolescents.

The overview consists of two axis. On the horizontal axis, the three pillars of Reynolds’ model are positioned, which include the critical factors for compliance that are central to the perspective of the regulator (the government). On the vertical axis, the three factors of Havinga are positioned, which include the critical factors to the perspective of the vendor. The center of the model, where the factors of Havinga and Reynolds intersect, exists of nine separate cells. Each of these cells are named, defined and explained in Table 3. The 11 dimensions of compliance derived from the ‘Table of Eleven’ are allocated across the nine cells in the center of the model, with the strength of the dimensions determined by both the three factors of Havinga (the vendor) and the three factors of Reynolds (the regulator/government). The hypothesis is that in the center of the overview the most critical factors of compliance are positioned. Notable is that the ‘Table of Eleven’ does not focus on the ability of compliance and certain

dimensions are not directly applicable to this specific research. Therefore, based on the ‘Table of Eleven’ and research design derived from Gosselt et al. (2008), different constructs have been drawn up. These constructs are also going to be investigated in this research and include the ‘practical feasibility’, ‘support in store’ and ‘training aims’ to cover the ‘ability’ of the applicator to comply, which is ignored by the ‘Table of Eleven’.

In the overview in Table 2 the cell names are coloured in light blue, the proposed constructs are outlined bold and the 11 dimensions according to the ‘Table of Eleven’ are outlined in grey and numbered according to the earlier explanation of the ‘Table of Eleven’.

Table 2: Overview of compliance

	Regulations	Enforcement	Education
Ability	<i>1. Feasibility of Regulation</i>	<i>2. Ignorability of Enforcement</i>	<i>3. Application Training</i>
	✓ Support in Store ✓ Practical Feasibility		✓ Training aims
Knowledge	<i>4. Clarity of Regulation</i>	<i>5. External Control</i>	<i>6. Experience with Rules</i>
	✓ Clarity of rules 1. Knowledge of rules - Clarity of rules	✓ Perceived External Control 6. Informal report probability 7. Control probability - Administrative control - Physical control 8. Detection probability - Administrative detection - Physical detection 9. Selectivity	✓ Familiarity with rules ✓ Perceived legal basis 1. Knowledge of rules - Familiarity with rules
Motivation	<i>7. Law Abidance</i>	<i>8. Sanctions</i>	<i>9. Organizational Attitude</i>
	✓ Attitude Towards Norms 4. Normative commitment - Government authority - Competing authority	✓ Risk of Sanction ✓ Sanction Severity 10. Risk of sanction 11. Sanction severity	✓ Non-Governmental Control ✓ Organizational Acceptance ✓ Personal Acceptance ✓ Perceived Responsibility ✓ Costs and Benefits ✓ Knowledge Effects 2. Cost-benefit considerations: - Financial-economic - Immaterial 3. Level of acceptance - Acceptation policy - Acceptation efficacy policy 5. Informal control - Social control - Horizontal monitoring

Each of the nine cells in the overview of Table 2 are named, defined and explained in Table 3.

Table 3: Definition of the cells

<i>1. Feasibility of regulation</i>
The extent to which the vendor has the practical ability to comply with the regulation. Specifically, it describes the practicability of the regulation.
<i>2. Ignorability of enforcement</i>
The extent to which the (instant) enforcement of the regulator (government) influences the ability of (non)-compliance.
<i>3. Application Training</i>
The extent to which the vendor is trained and informed to proceed the regulation.
<i>4. Clarity of Regulation</i>
The extent to which the rules are clear, understandable and not too complicated to comply.
<i>5. External Control</i>
The extent to which the vendor is aware about when and how the enforcement takes place.
<i>6. Experience with Rules</i>
The extent to which the vendor is experienced and has the knowledge to comply.
<i>7. Law abidance</i>
The extent to which the regulator and their policy are seen as reasonable by the vendor.
<i>8. Sanctions</i>
The extent to which the vendor is motivated to comply due the eventual consequences and sanctions of non-compliance (external motivations).
<i>9. Organizational attitude</i>
The extent to which the policy is accepted throughout the organization of the vendor.

3. Method

To be able to examine the determinants of compliance, a survey was designed. Hereafter the data gathering is elaborated on by addressing the procedure of the data collection, the research instrument, the research sample, the analyzed constructs and the analysis procedure.

3.1 Procedure

As the study is partially based on the 'Table of Eleven' and to align to that method, it is important to form a homogeneous group of respondents. The vendors and their supermarkets must sell not only alcohol but also tobacco and lottery tickets. In order to strengthen the generalizability, the research focusses on compliance in two widely distributed regions in the Netherlands: (1) Twente and (2) Amsterdam. To get a homogeneous sample from both regions, it is required that the participating respondents are working in a supermarket which both has stores in the Amsterdam and in Twente. The respondents were employed in the supermarkets of Albert Heijn, Jumbo, Dirk van den Broek or the Coop. To ensure anonymity of the participating supermarkets and their employees, it was decided to disregard the specific name of the supermarket in the analysis for which the respondent is employed. This is justified as the laws and policies of the supermarkets are similar to each other (the compliance policy is set by the central organ 'Central Bureau Groceries').

It was chosen to approach as many workers in both regions as possible to gain a representative sample size. The aforementioned supermarkets and vendors were approached by telephone, mail and face-to-face and were requested to contribute to the study by filling in the questionnaire. Hardcopy surveys were distributed by mail and face-to-face and an online questionnaire (developed with the online survey platform Qualtrics) was distributed via email. The respondents spent approximately 15 minutes to complete the questionnaire. The approach via mail yielded 107 completed surveys, face-to-face 144 and online 13.

Defining an effective approach, outlining a representative sample and collecting responses has proved to be a time-consuming and challenging learning process with many different actions, whereby in total about 300 supermarkets were approached, either face to face, through email and/or by telephone. Hence a summary of the process of data collection is located in Appendix II.

3.2 Instrument

A questionnaire was developed to test the determinants of compliance. In order to be able to measure the determinants of each of the three product groups, three versions of the questionnaire were in circulation; one for alcohol, one for tobacco and one for the lottery tickets & scratch cards. In order to keep the three questionnaires as homogeneous as possible, the differences merely concerned the replacement of the words 'alcohol' in 'tobacco' or 'lottery tickets & scratch cards'. The survey began with a short introduction where instructions of the procedure were explained and one's anonymity was guaranteed. Thereafter, the items in the questionnaire were divided into two parts and measured the different dimensions (factors and motivations of compliance) relevant to the research question (Part A), along with the general characteristics of the respective vendors (Part B). In Part A the dimensions of compliance were measured with a five point Likert scale and contained 79 statements which were responded to on a range from 1: completely disagree to 5: completely agree. The statements of Part A were divided into the following groupings: (1) questions about oneself, (2) questions about one's colleagues and (3) questions about one's store. In Part B general characteristics were asked, with the aim to test the relationship between the personal characteristics of a respective vendor with the critical factors of compliance. This covers the background characteristics of the respondent (age, sex, location of the store, working experience and yes/no own children). The complete survey can be found in Appendix I.

3.3 Respondents

The analysis was performed using the completed surveys from 250 respondents. As Amsterdam is much more densely populated than Twente and therefore has much more supermarkets, the majority of respondents are located in the region of Amsterdam. Furthermore, 81% of respondents are women, simply because the research found that the majority of employees who work as cashiers and at the service desks of supermarkets are women. There were fewer surveys completed for the product sub-group, lottery tickets and scratch cards. This is due to the fact that supermarkets have simply fewer counter employees than cashiers (lottery tickets are only sold at the counter desk). Table 5 gives an overview of the region where the respondents are employed and surveys completed by product sub-groups.

Table 5: Region and product sub-groups respondents

		Location		
		<i>Amsterdam</i>	<i>Twente</i>	<i>Total</i>
Theme	<i>Alcohol</i>	58	33	91
	<i>Tobacco</i>	59	36	95
	<i>Gambling</i>	55	9	64
<i>Total</i>		172	78	250

3.4 Reliability of constructs

In order to analyze the constructs, an adequate internal consistency of the constructs is essential. 12 of the 17 constructs has a higher Cronbach's Alpha than the minimum of $\alpha = 0.6$. In order to reach a sufficient alpha, one item is removed from the constructs 'perceived legal basis', 'self-reported compliance' and 'clarity of rules'. Then a factor analysis has been conducted for the constructs with an Cronbach's Alpha lower than $\alpha = 0.6$ in order to detect underlying relations. The items of the constructs 'risk of sanction' and 'sanction severity' were found to have a relationship. As the statements (items) of both constructs showed strong similarities regarding the subject, it is chosen to form a new construct 'sanctions' consisting of three items of 'sanction severity' and two items of 'sanction risk'. The items associated with the problematic constructs 'knowledge effects risky product', 'non-government control' and 'costs and benefits' will be analyzed individually and can be located in Appendix III. Table 6 shows the internal consistency of the constructs. Only the constructs with $\alpha > 0.6$ are used for the analysis.

Table 6: Internal consistency constructs

<i>Construct</i>	<i>Cronbach's Alpha</i>	<i>Number of items</i>
Practical feasibility	.852	13
Support in store	.796	4
Attitude towards norms	.789	4
Personal acceptance	.732	4
Perceived responsibility	.722	4
Training	.721	4
Self-reported compliance	.701	5
Sanctions	.671	5
Perceived legal basis	.663	3
Organizational acceptance	.658	4
Perceived external control	.656	4
Familiarity with rules	.648	3
Clarity of rules	.610	3
Risk of sanction	.569	3
Non-government control	.564	3
Sanction severity	.520	4
Knowledge effects risky product	.510	3
Costs and benefits	.484	4

3.5 Description of construct

The constructs which were analyzed are explained in this section and additionally examples of items are given. The constructs are divided according to the 9 cells of the proposed overview in Table 2.

1. Feasibility of regulation

- Support in store: The extent to which the colleagues and management of the store provide the necessary support to the vendor to be able to comply. E.g.:
 - In the store, sufficient support of colleagues is there to help me in complying with the rules.
 - The management of the store has taken adequate actions in the workplace, so I can comply with the age limit.
- Practical feasibility: This construct involves the practical issues related to compliance for vendors. E.g.:
 - I find it hard to estimate the age of adolescents
 - As a vendor I may encounter problems when I ask for an ID.'

2. Ignorability of enforcement

Ignorability of enforcement is not applicable to the research, because in daily situations vendors are able to ignore the law because they work without instant control of external enforcement.

3. Application Training

- Training: The extent to how the vendor is trained to comply. E.g.:
 - Before I started my current job, I have been instructed about the enforcement of the minimum age for buying alcohol.
 - I was taught how to act when a minor wants to violate the age limit.

4. Clarity of regulation

- Clarity of rules: Personal judgment of the vendors about the clarity of the rules. E.g.:
 - The rules are too complicated.
 - There are too many rules for the sale of alcohol.

5. External control

- Perceived external control (External surveillance): External surveillance refers to the estimated chance of control by (governmental or nongovernmental) authorities. E.g.:
 - When our store does not comply with the regulations, chances are that this might be discovered.

- The chance that an inspector visits our shop is small.

6. *Experience with Rules*

- *Familiarity with rules:* The extent to which vendors are familiar with the rules. E.g.:
 - My direct colleagues knows too little about the laws and regulations of alcohol sales.
 - I know the rules of the supermarket on alcohol sales well.
- *Perceived legal basis:* This variable involves the extent to which vendors are aware of a legal basis for complying with the rules. E.g.:
 - Stores are punishable by law when alcohol is sold to an adolescent of 17 years old
 - Age restrictions are irrelevant to the vendor; they are recommendations to parents.”

7. *Law abidance*

- *Attitude towards norms:* This variable focuses on the extent to which vendors are generally inclined to comply with regulations and their overall respect for authority. E.g.:
 - I find that I should comply with regulations
 - I choose myself to which rules I will comply to and to which rules not.

8. *Sanctions*

- *Sanctions:* This refers to the by the vendor estimated chance and severity of a sanction after verification of violation of the age limit. E.g.:
 - By violating the age limit during a control, chances are that the store gets fined.
 - It can have serious personal consequences if discovered that I do not stick to the age limit.

9. *Organizational attitude*

- *Organizational acceptance:* This variable deals with the (perceived) overall attitude toward regulation systems within the store. E.g.:
 - In our store, the regulations are not taken very seriously.
 - Our store supports the guidelines of the regulations.
- *Personal acceptance:* This construct relates to the perceived appropriateness of the rules. Acceptance may also relate to the implications of the rules and the manner in which the rules are implemented. E.g.:
 - I find that the minimum age for alcohol is correct.
 - I think that young people should be protected by law against alcohol.

- Perceived responsibility: The extent to which vendors think they are responsible. E.g.:
 - I think that I as vendor are responsible for alcohol that a minor buys.
 - I think that a minor is responsible for the alcohol he / she buys.

3.6 Analysis Procedures

The statistical analyses were performed using IBM SPSS Statistics. In order to prepare the dataset for the analysis, it was necessary to first detect outliers. The multivariate outliers in the dataset were detected with the robustly estimated Mahalanobis distance, which is also called the 'two standard deviation away from the mean rule'. Once the Mahalanobis distance is determined a Chi-Square distribution with d degrees of freedom followed to determine the outliers. Respondents with a Mahalanobis probability lower than 0.001 were considered as outliers. Besides, respondents with too many missing values were removed as well. 4 out of the 264 respondents were removed using the Mahalanobis distance, and 10 respondents were removed because too many missing values. The analysis was carried out with 250 respondents.

At first, a reliability analysis was used to test the internal consistency of the constructs. In order to compare the mean scores of the different constructs a One-Sample T-test with a median value of 3 was used. The ANOVA test is used in purpose to analyze the statistical differences of the constructs values between the alcohol, tobacco and lottery groups. Analyzing the explanatory determinants of (self)-reported compliance, a hierarchical multiple regression analysis was performed. Finally, a Spearman's rank-order correlation analysis was performed to test the efficacy of the constructs within the cells of the proposed overview in Table 2.

4. Results

In this section the descriptive results are summarized. First, the differences in the construct values between the three product groups are explained. Thereafter, it is described how the self-reported compliance can be explained by the constructs, through using a hierarchical multiple regression analysis. The results of this analysis provide indications for the overall improvement of compliance. Finally, the efficacy of the proposed overview of compliance (Table 2) is tested by means of both correlation and reliability tests.

4.1 Descriptive results

Table 7 presents the descriptive scores for each the different constructs. The three columns associated with 'mean total' display the total mean score of all of the constructs together. Based on a T-test for one average, significant differences from the neutral 3 score can be calculated. A notable finding is 'perceived responsibility' is the only construct that does not significantly differ from 3, while the other constructs are valued significantly higher. The three columns in Table 7 regarding 'mean per group' refer to the mean scores per group on an individual basis. The last three columns, which relate to 'mean comparison', show the significance level for the significant mean differences between the three product groups. These scores are initially calculated with a multiple comparison test (Bonferroni post hoc test). A further multiple comparison (LSD), is then used to detect the significant differences within these groups.

Descriptive results per constructs

The descriptive results for each construct are described in this section. A high value indicates a positive response to the propositions. A maximum score of 5 equates to a response of 'strongly agree' and minimum score of 1 corresponds to a response of 'strongly disagree'. In order to give additional explanatory information, the percentages of agreeing respondents (score ≥ 4) and disagreeing respondents (score ≤ 2) are discussed for each respective construct.

1. Compliance

The construct *compliance* describes the self-reported compliance of the vendors. With a score of $M = 4.6$ on 5 items, the vendors clearly indicate that they comply with the age-

limits. Among the respondents, 97% state that the store complies with the age-limit ($M = 4.6$), of those, 89% pay attention to the minimum age ($M = 4.5$). Further, 89% indicate that they do not sell alcohol to minors ($M = 4.5$), among them, 89% sell age-restricted products only after identification when they doubt whether the customer is old enough ($M = 4.5$). Overall, 94% of the vendors indicate they comply with the legal age ($M = 4.7$). In addition, the vendors were asked how they rate themselves on a scale of 1 - 10 for compliance and overall they rate themselves with an 8.6.

The type of product group had a significant effect on the results within the self-reported compliance construct, $F(2, 249) = 7.87, p < .001$. The lottery group ($M = 4.33, SD = .75$) reported significantly less compliance with age-limits than both the alcohol group ($M = 4.57, SD = .52$) and tobacco group ($M = 4.68, SD = .38$). This can be explained the most by the responses to the following statement; 'If I doubt whether the customer is old enough, I only sell after identification'; among the lottery group 78% agrees with this statement, while this percentage spikes to 91% among the alcohol group and 94% among the tobacco group.

2. Attitude towards norms

The construct *Attitude toward norms* focusses on the extent to which vendors are generally inclined to comply with regulations and their overall respect for authority. The results indicate that vendors consider themselves highly law-abiding. Among the vendors, 95% state that they comply with the set rules ($M = 4.6$) and 87% do not perform activities which will get them into trouble ($M = 4.3$). Further, 80% state that they do not independently determine whether or not to comply with the rules ($M = 4.2$) but that this determination is made by the respective authority. At last, 87% of the vendors think that even if he/she does not agree with the rules, they must follow them ($M = 4.4$). No significant differences are found between the product groups.

3. Clarity of rules

This construct is concerned with the personal judgment of the vendors on the clarity of the rules regarding age-restricted products. Among the respondents, 84% state that they are given sufficient information about the law ($M = 4.2$) and only 19% of those judge the rules to be too complicated.

The type of product group had a large effect on the results within this construct, F

(2, 249) = 3.72 $p < .03$. The lottery group ($M = 3.61$, $SD = .75$) valued the clarity of rules significantly lower than the tobacco group ($M = 3.95$, $SD = .79$). This is largely explained by the responses to the following two statements: (Statement 1) 'New vendors receive sufficient information about the rules'. Among the lottery vendors only 63% indicate that they received sufficient information, while this percentage is much higher among the tobacco vendors at 92%. (Statement 2) 'In our shop we talk about the age-limits'. The results show that the age-limit of lottery products (56%) is much less spoken about than the age-limit on tobacco products (80%).

4. Perceived external control

External control refers to the perceived level of control by (governmental or non-governmental) authorities. Among the respondents, 52% respond that the chance that an inspector will visit the store is not small ($M = 3.4$) and 65% believe that there is a high chance that he/she will have their decisions monitored while at work ($M = 3.8$). Of those, 55% believe that there is a high chance of external detection if they sell a risky product to a minor ($M = 3.7$) and 63% think that the shop will receive negative consequences if risky products are sold to minors ($M = 3.7$).

Also for external control, the type of product group had a large effect on the results, $F(2, 249) = 9.51$ $p < .001$. The alcohol group ($M = 3.89$, $SD = .70$) experiences significantly more external control than the tobacco ($M = 3.59$, $SD = .86$) and lottery group ($M = 3.33$, $SD = .81$). The responses to one statement in particular, depict an immense difference between the alcohol and lottery group. Among the tobacco group, 74% disagree with the statement that 'There is only a small chance that an inspector visits the store', while only 31% of the lottery group disagree with this same statement.

5. Familiarity with rules

This construct is concerned with the personal judgment of the vendors on their familiarity with the rules. Among the respondents, 93% state that they and their colleagues sufficiently understand the sales rules ($M = 4.5$), 92% believe they sufficiently understand the law ($M = 4.6$) and 81% indicate that problems with the compliance of the age-limits are being discussed on an on-going basis in the store ($M = 4.1$).

The type of product group was found to have a significant effect within familiarity with rules, $F(2, 249) = 4.45$ $p < .02$. The lottery group ($M = 4.17$, $SD = .73$) reported

significantly less familiarity with the rules than the tobacco group ($M = 4.46$, $SD = .56$). The most salient difference is that 80% of the vendors of the tobacco group indicate that problems associated with the age-limits of tobacco are discussed in the store, while this was suggested by only 67% of respondents for lottery products.

6. Organizational acceptance

Organizational acceptance deals with the (perceived) overall attitude toward regulation systems within the store. Among the respondents, 92% indicate that the acceptance within the organization is high, 87% confirm that the minimum age-limits are taken seriously in the organization ($M = 4.6$) and 87% state that the store supports the law ($M = 4.4$). Of those, 94% respond that all colleagues know about the rules ($M = 4.3$) and 70% of the respondents estimates that their colleagues agree with the age-limits ($M = 4.0$).

The type of product group had a significant effect on organizational acceptance, $F(2, 249) = 21.64$ $p < .001$. The lottery group ($M = 3.91$, $SD = .66$) reported significantly less organizational acceptance than both the alcohol ($M = 4.41$, $SD = .49$) and the tobacco group ($M = 4.45$, $SD = .51$). Although there are four independent statements which account for the vast difference in responses across product groups, one statement in particular depicts the most significant difference. Among the lottery group, 67% of the respondents state that the organization supports the guidelines of the 'Law on Gambling', while this is much higher at 90% for the 'Alcohol and Hospitality Law' and an even further climb to 95% for the 'Tobacco Law'.

7. Perceived legal basis

This construct involves the extent to which vendors are aware of a legal basis for compliance with the rules. The overall awareness of the rules appears to be very high, as 95% of the vendors understand that stores are punishable if they are caught selling risky products to minors ($M = 4.7$) and 93% understand that the vendor may not sell the risky product, even if the minor wants to buy it ($M = 4.7$). Among the respondents, 86% indicate an understanding that the age-limit is not a mere guidance but an actual law ($M = 4.5$) and 90% understand that the risky products may not be sold to minors. No significant differences were found between the product groups.

8. Personal acceptance

This construct relates to the perceived reasonableness of the rules. Acceptance may also relate to the implications of the rules and the way in which the rules are implemented. Among the respondents, 72% consider the minimum age-limit as useful ($M = 4.0$) and 79% find it to be set at the correct age ($M = 4.1$). Of those, 72% do not perceive the rules as being too severe (3.0) and 79% of the respondents believe that minors must be protected by law against the use of risky products ($M = 4.0$). No significant differences were found between the product groups.

9. Practical feasibility

Practical feasibility involves the practical issues related to compliance for vendors. Overall, the vendors declared that there are minimal difficulties involved for non-compliance. However, 20% find it difficult to verify the age of a minor ($M = 3.7$) and 29% find it difficult to estimate the age of the customer ($M = 3.3$). It is further stated by 12% that minors attempt to purchase the risky products with fake ID's ($M = 3.6$), and 16% experience problems upon asking for customer's ID ($M = 3.7$). Additional difficulties that were indicated were as follows: 18% experience problems if they refuse to sell the risky product ($M = 3.9$), 16% find it hard if the minor attempts to purchase the risky product in a group ($M = 4.0$), 5% find it difficult to refuse the sale if the minor claims the risky product is for an adult ($M = 4.4$) 8% of the respondents experience fear of aggression ($M = 4.1$), 5% mention that time pressure is a reason not to comply ($M = 4.4$) and 37% state that the minors do not accept the age-limits. No differences are found between the product groups.

10. Perceived responsibility

This construct refers to the extent to which vendors think they are responsible for the purchase of risky products by minors. Among the respondents, 54% indicate that it is the vendors ($M = 3.4$) themselves who are responsible for the sale of risky products to minors, while 50% indicate that it is the store responsibility ($M = 3.3$) and 53% believe that it is the purchasing minor who is responsible ($M = 3.5$).

The type of product group had a significant effect within the perceived responsibility construct ($F(2, 249) = 3.43, p < .04$). The vendors of the lottery group ($M = 3.34, SD = .84$) feel significantly more responsible for the purchase among minors than

the tobacco group ($M = 2.96$, $SD = 1.02$). Among the lottery vendors 66% think that they are responsible for the product that the minor purchases, while this is only 47% within the tobacco group.

11. Sanctions

This construct refers to the perceived probability and severity of a sanction against the vendor following the verification of an age-limit violation. Among the respondents, 74% indicate that the fines which the store can receive by violating the age-limits are severe ($M = 4.0$), and 79% say that ignoring the age-limits can also result in serious personal consequences ($M = 4.1$). Further, 88% indicate that actions are taken if a store manager discovers that the cashier fails to comply with the age-limit ($M = 4.3$). The possibility that an age-limit violation will result in the store receiving a fine is perceived as high by 84% of the respondents ($M = 4.3$). Also, 63% believe that it is possible that the store will lose its license if it is caught violating the age-limits ($M = 3.7$). There are no differences between the product groups.

12. Support in store

Support in store refers to the extent to which the colleagues and management provide the necessary support to the vendor to be able to comply with the age restrictions. Overall, the vendors experience strong support ($M = 4.4$). Among the respondents, 92% indicate that the management has taken adequate measures for compliance ($M = 4.5$), of those, 91% experience sufficient support from colleagues ($M = 4.4$). Further, 92% state their manager provides sufficient support ($M = 4.5$) and 81% indicate that sufficient safety measures are available ($M = 4.2$). No differences are found between the product groups.

13. Training

This construct is concerned with the extent to how the vendor is trained to comply. The vendors generally state that they are well trained to comply with the age-limits. Among the respondents, 88% state that instructions are given before they have started their job ($M = 4.5$), among those, 90% received training on how to act when a minor wants to buy a risky product ($M = 4.4$) and 90% of the vendors understand how to react professionally when the minor is planning to violate the age-limit ($M = 4.4$). Among the

respondents, 99% mention that they were instructed to ask for customer ID, if there are any doubts about the age of the customer ($M = 4.8$)

The type of product group had an effect on the results within the training construct, $F(2, 249) = 8.36$ $p < .001$. The results on training were significantly lower for the lottery group ($M = 4.32$, $SD = .71$) in comparison to both the alcohol ($M = 4.59$, $SD = .53$) and tobacco group ($M = 4.62$, $SD = .49$). Namely, 78% of the lottery group vendors indicate that they received clear and concise instructions on how to handle the situation when a minor wants to buy a risky product. For both the alcohol and tobacco groups, this was much higher with 92%.

Table 7: Mean scores and differences between groups ($N = 250$)

	Mean total			(M) Mean per group			Mean Comparison		
	Mean Total (M)	Std. D. (SD)	Sign. from 3 (p)	Alcohol	Tobacco	Lottery	Alcohol / Tobacco	Alcohol / Lottery	Tobacco / Lottery
1. Compliance	4.55	0.56	$p < 0.001$	4.57	4.68	4.33		$p < .050$	$p < .001$
2. Attitude Towards Norms	4.39	0.65	$p < 0.001$	4.38	4.44	4.32			
3. Clarity Of Rules	3.81	0.79	$p < 0.001$	3.80	3.95	3.61			$p < .050$
4. External Control	3.63	0.82	$p < 0.001$	3.89	3.59	3.33	$p < .050$	$p < .001$	
5. Familiarity With Rules	4.36	0.63	$p < 0.001$	4.40	4.46	4.17			$p < .050$
6. Organizational Acceptance	4.30	0.59	$p < 0.001$	4.41	4.45	3.91		$p < .001$	$p < .001$
7. Perceived Legal Basis	4.64	0.62	$p < 0.001$	4.67	4.70	4.50			
8. Personal Acceptance	4.01	0.78	$p < 0.001$	4.04	4.01	3.95			
9. Practical Feasibility	3.81	0.65	$p < 0.001$	3.77	3.84	3.83			
10. Perceived Responsibility	3.08	0.93	$p = 0.172$	3.02	2.96	3.34			$p < .050$
11. Sanctions	3.93	0.67	$p < 0.001$	3.99	3.92	3.84			
12. Support In Store	4.39	0.60	$p < 0.001$	4.36	4.46	4.35			
13. Training	4.53	0.58	$p < 0.001$	4.59	4.62	4.32		$p < .050$	$p < .010$

Although the perceived responsibility is the only construct which has no positive difference with the mean score 3, there is a risk of abnormally high scores being caused by socially desirable answering. Therefore, an additional overview is given in Appendix IV, where a rating is displayed by the scores of constructs per product group. This overview shows that the 'Perceived Responsibility', 'External Control', 'Practical Feasibility', 'Clarity of Rules' and 'Sanctions' are the five lowest scoring constructs among the three product groups.

4.2 Explanatory determinants of the (self)-reported compliance

Table 8 shows the extent to which the (self-reported) compliance can be explained by the constructs and further which constructs are most related to compliance. Through employing a hierarchical multiple regression analysis, it is explored to what extent the dependent variable 'Compliance' can be predicted by the other constructs. In the first model the explanatory value of a number of background characteristics of vendors (sex, yes/no own children, working experience) is tested, in a second model the remaining constructs are analyzed. While the background variables (sex, having children, working experience) cannot explain compliance, the independent constructs together explain 51% of the variance of the self-reported compliance. Four constructs are significant predictors of compliance: (1) 'Attitude towards Rules' (8%), (2) 'Familiarity with Rules' (6%), (3) 'the Perceived Legal Basis' (9%) and (4) 'the Personal Acceptance' (6%). When the explanatory value is assessed in a regression analysis for only these four constructs, the percentage of explained variance proves to be high with $R^2 = 43\%$. Notably, is the 'Clarity of Rules' construct, which has a marginal significant (but negative) relation with the self-reported compliance and explains less than 2% of the compliance rate.

Table 8: (Total) Explainable value of constructs on self-reported compliance

	Model 1		Model 2		Sign.
	b*	t	B	T	
Sex	-.027	-.417			.677
Children	-.056	-.763			.446
Experience	.030	.399			.690
Location	.094	1.445			.150
Attitude Towards Norms			.231	4.440*	.000
Clarity of Rules			-.080	-1.950	.052
External Control			.007	.188	.851
Familiarity with Rules			.224	3.792*	.000
Organizational Acceptance			.092	1.415	.158
Perceived Legal Basis			.264	4.826*	.000
Personal Acceptance			.153	3.678*	.000
Practical Feasibility			-.042	-.881	.379
Responsibility			-.039	-1.246	.214
Sanctions			-.035	-.745	.457
Support in Store			.059	1.047	.296
Training			.023	.375	.708
Adjusted R ²		0.017		0.507	
F (Change)		1.016		14.596	
Df (Eigenvalue)		4.587		16.684	

* Significant at 0.05 level.

4.3 Measurements

In order to determine whether or not the proposed overview and its nine associating cells function as proposed, a consistency analysis (Pearson correlation, Table 9) of the constructs and a reliability analysis (Cronbach's Alpha) of the individual items within each cell were employed. This approach confirms whether or not the statements and constructs within one of the nine cells of the overview are related to each other. As five cells in the proposed overview only consist of one construct, the Cronbach's alpha of the items within a construct is used to determine the efficacy of a particular cell. The cell 'Ignorability of Enforcement' is not applicable to the research and therefore was impossible to test its efficacy. The constructs and statements within the eight analyzed cells appear to be related to each other and therefore it is assumed that the efficacy of the overview is proven. These findings are discussed for each individual construct below.

Feasibility of Regulation

The 13 items of 'Practical Feasibility' and the 4 items of 'Support in Store' together have a high reliability of $\alpha = .846$. The correlation between both constructs is significant; $r = .228, p < .010$. Due to the high alpha and the correlation between both constructs, the cell 'Feasibility of Regulation' is strong.

Application Training

This cell consists of one reliable construct, 'Training' ($\alpha = .721$). Due to the high value of alpha, the cell 'Application Training' is measurable with the construct 'Training'.

Clarity of Regulation

This cell consists of one reliable construct, 'Clarity of Rules' ($\alpha = .610$). As the alpha is sufficient, the cell 'Clarity of Regulation' is measurable with the construct 'Clarity of Rules'.

External Control

This cell consists of one reliable construct, 'Perceived External Control' ($\alpha = .656$) and therefore the cell 'External Control' is measurable with the construct 'Clarity of Rules'.

Knowledge of Regulation

The six items of 'Perceived Legal Basis' and 'Familiarity with Rules' together have a high alpha of $\alpha = .727$. Both constructs have a significant correlation; $r = .429, p < .010$. The cell 'Knowledge of Regulation' is thus measurable with both constructs.

Law Abidance

This cell consists of one reliable construct, 'Attitude towards Norms' ($\alpha = .721$). Due to the alpha's high value, the cell 'Law Abidance' is measurable with the construct 'Attitude towards Norms'.

Sanctions

This cell consists of one reliable construct, 'Sanctions' ($\alpha = .727$). As the alpha is high, the cell 'Sanctions' is measurable with the construct 'Sanctions'.

Organizational Attitude

The constructs 'Perceived Responsibility', 'Personal Acceptance' and 'Organizational Acceptance' form a group together with an internal consistency of $\alpha = .750$. The constructs 'Personal Acceptance' and 'Organizational Acceptance' yield a correlation of $r = .335, p < .010$ and in addition the constructs 'Personal Acceptance' and 'Perceived Responsibility' yield a correlation of $r = .374, p < .010$.

Table 9: Correlations between the constructs of compliance

	1.a	1.b	3	4	5	6.a	6.b	7	8	9.a	9.b	9.c
1.a Support In Store	-											
1.b Practical Feasibility	.228**	-										
3. Training	.561**	.192**	-									
4. Clarity Of Rules	.297**	.333**	.342**	-								
5. External Control	.296**	.080	.280**	.277**	-							
6.a Familiarity With Rules	.384**	.354**	.437**	.474**	.374**	-						
6.b Perceived Legal Basis	.220**	.364**	.300**	.364**	.161*	.425**	-					
7. Attitude Towards Norms	.265**	.233**	.349**	.243**	.327**	.318**	.458**	-				
8. Sanctions	.256**	.033	.276**	.102	.367**	.194**	.194**	.427**	-			
9.a Organizational Acceptance	.397**	.177**	.486**	.346**	.464**	.521**	.304**	.425**	.432**	-		
9.b Personal Acceptance	.162*	.199**	.120	.275**	.256**	.106	.154*	.266**	.281**	.335**	-	
9.c Perceived Responsibility	.021	.111	.070	.129*	.024	.014	.038	.076	.107	.027	.374**	-
COMPLIANCE	.322**	.231**	.363**	.252**	.278**	.458**	.508**	.528**	.280**	.476**	.316**	.047

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

5. Conclusions

The purpose of this study was to evaluate which factors influence (non)-compliance to legal age-limits and to assess the differences and similarities in compliance between three product groups; alcohol, tobacco and gambling products. This was examined on the basis of self-reported compliance by vendors and across 12 possible influencing factors relating to compliance. In the previous chapter, the results were reported. In this section the results will be interpreted and an answer will be given to the research question *'What are the determinants of vendors' (non-)compliance with legal age restrictions on alcohol, tobacco and lottery products?'* will be given.

In assessing the scores of every factor, each of the scores has a strongly positive value, apart from 'Perceived Responsibility'. This demonstrates that vendors believe that they are able, willing and have the knowledge to comply. The construct 'Perceived Legal Basis' is valued the highest across the three product groups.

Focusing on the differences and/or similarities of the determinants between the three product groups, the values of tobacco and alcohol are relatively similar, with only the perceived 'External Control' being considered higher among the alcohol vendors compared to the tobacco group (and lottery group as well). In assessing the lottery group, five determinants have a significantly lower average compared to the tobacco and alcohol group. Most importantly, the overall self-reported compliance was judged to be lower within this product group, which is associated with lower scores on the factors 'Familiarity with Rules', 'Training', 'Organizational Acceptance', 'Perceived External Control' and 'Clarity of Rules'. Also notable, is that only the construct 'Perceived Responsibility' scores higher among the lottery group compared to both the alcohol and tobacco group.

Regarding the proposed framework of the efficacy of compliance, eight of the nine cells had an internal consistency and/or a correlation between the statements and constructs within the cells. This demonstrates that eight of the nine cells of the framework functions as proposed.

In assessing the explanatory determinants of compliance, the strongest factors which prove a positive relationship with the (self-reported) compliance were the 'Attitude towards Norms', 'Familiarity with Rules', 'Perceived Legal Basis' and 'Personal Acceptance'. In contrast, the 'Clarity of Rules' had a marginal significant negative relation with the (self-reported) compliance.

5.1 Discussion

The use of alcohol, tobacco and lottery products among adolescents is a well discussed topic in our society, due to the potential problems these products can provoke. Despite the fact that the harmfulness of these products is widely acknowledged, many adolescents continue to drink alcohol, smoke tobacco and gamble, causing them to run into problems caused by this behavior. Therefore, prevention of the availability of risky products to minors is an increasing societal concern and scientific literature reflects this sentiment. Preventative measures which have already been implemented are age-restriction regulations for alcohol, tobacco and lottery products. Essential for the efficacy of such regulations is the compliance of vendors with the law at the point of sale. For this reason, the determinants which influence the (non)-compliance with the age-limits need to be assessed and debated. In order to measure these determinants, this research has proposed a new measurement instrument, based on the theoretical framework, to assess 17 constructs (including the Self-Reported Compliance). Each construct represents a factor or motive of (non)-compliance. Among the 17 constructs, 13 proved to be consistent and were included in the analysis process.

The vendors indicate a strong self-reported compliance with the rules and 97% states that they comply with the age limits. Almost the same result was found by research of Intraval (2012), which showed that 100% of their respondents indicated that they complied with the age-limits. Contrary, recent research indicated much worse figures in actual compliance. For example, Gosselt, Neefs, Van Hoof & Wagteveld (2012) reporting a compliance rate of 0% on lottery tickets and scratch cards within their study. However, it can be assumed that there is a vast difference between the actual compliance rates and the vendor perceived compliance. Therefore, more awareness and a realistic view among the vendors about the actual compliance rates is needed. As the compliance among the lottery group is significantly lower compared to the alcohol and tobacco group, it can also be assumed that the compliance of age limits regarding lottery products is taken less seriously than the other product groups. This outcome is amplified by the particularly low scores of the organizational acceptance factor and the external control factor. This implies that more external control and enforcement is needed to intensify the perceived risk of control, and that education from the government must be available in order to make the organization and its vendors aware of the risks that lottery product may provoke to its users. These would be positive steps

towards decreasing the organizational acceptance of the gambling policy and its respective age limits.

In assessing the determinants of (self-reported) compliance, the 12 factors explain for more than 50% of the score on compliance and four of these constructs are significantly related to compliance; (1) 'Attitude Towards Norms', (2) 'Familiarity with Rules', (3) 'Perceived Legal Basis' and (4) 'Personal Acceptance'. This demonstrates the main finding of this research; the higher the score on these factors, the higher the chance that the vendor complies with the rules. The 'Clarity of Rules' has a marginal significant negative relation with the (self-reported) compliance, which seems inconsistent as various other researchers find that clear rules positively influence the actual compliance. This outcome may suggest that the statements associated with the construct 'Clarity of Rules' are inadequate and complex.

Determinants of Compliance

The two constructs 'Perceived Legal Basis' and 'Familiarity with Rules' show high values and are strongly related to each other. This is amplified by the fact that both constructs are, from the perspective of the regulator, mostly influenced by education and, from the perspective of the vendor, mostly influenced by the knowledge of the vendor. The high values of both constructs demonstrate that vendors are familiar with, and aware of, the rules and both are strongly positive related with the self-reported compliance. The 'Familiarity with Rules' explains for 6% of the 'Self-Reported Compliance' score and the 'Perceived Legal Basis' for 9%. According to the proposed framework, these findings imply that the 'Self-Reported Compliance' is largely dependent on the vendors' experience with the proceeding of the age limits, which is influenced by the educational pillar of Reynolds (2003). Besides these two constructs, the construct 'Personal Acceptance' explains 6% of 'Self-Reported Compliance' and is, similar to 'Familiarity with Rules' and 'Perceived Legal Basis', related to education of the organization and the government about the policy. This shows that three of the four determining factors of the 'Self-Reported Compliance' can be influenced through education, through in-store education (by the organization) and national campaigns/school programs (by the government) in order to make the vendors familiar with and aware of the rules and heighten vendor acceptance of the rules. The importance of education is highlighted by Parker (2000) who stated that regulators need to nurture organizational capacity to

comply through offering education, assistance, consultations, and offering special expertise in the area of compliance.

The last determinant of compliance is 'Attitude Towards Norms' which explains 8% of the 'Self-Reported Compliance' score. In general, the law abidance is the predominantly constant attitude of a person (CCV, 2004) and can therefore be hardly influenced by means of interventions. The strong relationship of the 'Attitude Towards Norms' with the 'Self-Reported Compliance' rate corresponds with other research; "The most prominent reason to comply with the rules is based on intrinsic support for the rules and a vendor's law-abiding nature" (Gosselt, Van Hoof & De Jong, p. 9. 2010). The 'Attitude Towards Norms' is strongly related to the 'Perceived Legal Basis' and the two are the most important determinants of compliance. As 'Attitude Towards Norms' is largely innate and difficult to influence, organizations could consider assessing the law abiding nature of applicants within the recruiting process for new staff.

A gap in the research is the measurement of the cell 'Ignorability of Enforcement' which was proven unfeasible within the applied research method. The potential ignorability of the rules regarding the compliance of risky products is high, as it is relatively easy for the vendors to ignore the age limits. An alternative would be to remove the age control completely from the weakest point of compliance, the vendor behind the cash register, to control at distance by a third party by means of the electronic highway (Van Hoof & Van Velthoven, 2014). In principle there is no possibility for non-compliance when sales points make use of electronic age verification systems and using these systems would decrease the purchase among youth drastically. Further, Van Hoof and Van Velthoven (2014) argue that the (economical) availability of alcohol should be increased when such electronic measures are available in stores, as minors are only able to purchase at on-premise locations where the effective price is much higher. Although there are advantages of electronical systems, research conducted by Gosselt, Van Hoof & De Jong, (2010) has shown that only 10% of the alcohol retailers made use of additional internal support systems. Additionally, supermarkets have recently been sued over cartel activities against the implementation of electronic systems, as it would cost the supermarkets too much revenue (Dutch Broadcast Organization VPRO, 2015). Therefore, it is advised to the government and politics to strive towards the requirement of electronic age verification devices in stores.

Until these systems are implemented in stores, it is important for governments

and organizations to focus primarily on the education pillar relating to Reynold's model, to ensure that the vendor has the right information, which can influence both the motivation and the knowledge of a vendor to comply.

The remaining constructs

The remaining constructs are briefly discussed as there are no strong determinants of compliance.

Practical Feasibility; vendors do not find it easy to estimate the age of customer. This conforms to research conducted by Gosselt, et al. (2009), where 42% of the vendors indicated that they experienced difficulties in estimating the age limit of customers, however "problems with estimating the age of a customer can be resolved by simply asking for ID" (Gosselt, Van Hoof & De Jong, p.9 2010) and 97% of the cashiers do so (Intraval, 2012). Further, more than 90% of the vendors experience sufficient support by colleagues and managers. As the practical feasibility scores are relatively low, these findings reduced the usefulness of electronic measurements at the point of sale.

Training; approximately 90% of the vendors indicated that instructions about how to comply are given and almost all the vendors indicated that they are taught to ask for ID. This corresponds with research of Intraval (2010) which found that 100% of the vendors stated that they received instructions about how to comply. In this research 75% of the vendors indicated that they have had training, which is more than the 51% what the research of Gosselt, Van Hoof & de Jong (2010) found five years ago. Although the level of training seems improved, there are still opportunities for improvement and it is advised that every new vendor receive adequate training before they start working.

External Control; Only a slight majority expressed the probability of external control as high, and among the vendors of the lottery products less than a third thinks that there is a high probability of an inspector visiting the store in order to control the compliance. This corresponds with the research outcomes of Gosselt et al. (2010), wherein it is indicated that vendors do not perceive any real chance of being caught for non-compliance. Despite the relatively low perceived external control, research among grocery stores shows that 42% of the stores feel they are being controlled more often than 12 years ago (Intraval, 2012). A notable finding is that vendors of alcohol experience more control than vendors of tobacco and lottery products, which can be possibly explained by the current media attention on compliance of age limits regarding

alcohol sales. Overall, the government needs to intensify the enforcement in order to increase the perceived external control.

Clarity of Rules; The respondents perceive the rules to be unclear and the results show an even lower score among lottery sales compared to tobacco and alcohol. For the lottery products, in particular, there is ample opportunity for improvement when it comes to the clarity of the rules.

Sanctions; The influence of sanctions is perceived as relatively low, which corresponds with research to compliance of the media rating systems, wherein it is concluded that the violation sanctions have little effect on compliance, and avoidance of fines were only occasionally mentioned as a reason to comply (Gosselt, Van Hoof & De Jong, 2010). The law does not constitute a serious barrier regarding sales to young people, because sanction severity triggered no deterrence (Van Hoof & Van Velthoven, 2014). A logical option would be to intensify such sanctions.

Organizational Acceptance; The 'Organizational Acceptance' is strongly related to the 'Personal Acceptance. The organizational acceptance for lottery tickets is lower compared to alcohol- and tobacco sales. This demonstrates that organizational acceptance has to be strengthened by governmental actions such as education and awareness programs.

Perceived responsibility; The vendor's sense of responsibility was found to be low. The low perceived responsibility corresponds with research to factors of compliance by Gosselt et al. (2009) where it was found that vendors do not think they are solely responsible for the purchases of customers. In order to foster the perceived responsibility, a potential solution would be to make the vendor (partly) legally responsible for the compliance (now the organization the vendor works for is responsible for the compliance of their employees). The organization could foster the perceived responsibility through the approach of education and information about the responsible task the vendor has.

5.2 Implications

This research contributes to existing literature in taking the first step towards the development of a new measurement instrument for compliance. The determinants relating to the ability of the vendor to comply have been neglected in earlier research. As it is expected that electronic age verification will be implemented in phases, it is

important that issues relating to these electronic and instantaneous controls will be included in new measurement instruments.

The developed measurement instrument is based on a combination of three prevalent theories of compliance and forms a new framework of the efficacy of compliance (Table 10, Appendix V). An important proposition of the framework is that the policy and regulation are implemented by the regulator (e.g. the government), while this regulation is then enforced by applicator (e.g. the vendor and/or organization) and it is these two actors together that determine the efficacy and success of compliance. The perspectives of these two central actors are then taken with both including three determining factors; (1) the regulator; education, enforcement and regulations, and (2) the applicator; ability, knowledge and motivation. Following that a 3 x 3 framework is proposed and exists of nine cells. Each determinant of compliance can be placed into one of the cells and it explains the efficacy of compliance as a whole. The framework can be a useful tool to get an understanding of the efficacy of compliance and to implement targeted interventions. The framework provides an interesting new view on compliance, as it can be applied to several situations and it can be used for both successful implementation and compliance of regulations.

In order to increase the compliance rate, it is recommend to regulators and organizations to focus on education in particular, as the 'Personal Acceptance', 'Perceived Legal Basis' and 'Familiarity with Rules' are all strongly (positive) related to compliance and are predominately influenced by the educational pillar according Reynolds model (2003). This demonstrates that the successfulness of compliance is highly dependent on the quality and amount of information and education, which is given by the regulator (the government and the store management) to the applicator (the vendor) to comply with the rules.

It is recommended to organizations and regulators to ensure that the 'Familiarity with Rules', 'Perceived Legal Basis', 'Personal Acceptance' and 'Attitude Toward Norms' are positively assessed and valued by the vendors in order to reach a high compliance rate. As a positive rating of these constructs contributes the most to the compliance rate, eventual interventions has to be targeted, firstly on these factors when compliance issues arise and become problematic.

Finally, implications are aimed to the relatively low scores of the perceived enforcement. Sanctions and perceived external control are not strongly perceived as

reasons for compliance which demonstrates that an increase of enforcement by means of intensifying of sanctions and (governmental) control may be an effective tool for prevention.

5.3 Future research

This study provides thought-provoking and useful results, which can be used as starting point for further research. First within the theoretical framework which was developed based on a combination of Reynold's model, Havinga's three factors and the 'Table of Eleven', can be built upon and bolstered. While the efficacy of the proposed theory is supported by the research, more research is needed in order to strengthen the evidence of functioning of this framework. Primarily, as only 8 of the 9 cells in the model were tested within this study, more research on the 'Ignorability of Enforcement' should be conducted.

Another limitation is found among the examined constructs. From the original 17 constructs, only 13 constructs had a sufficient reliability to analyze them. Therefore, perceived 'External Control', 'Internal Control', the 'Knowledge about Risks' and 'Costs and Benefits' were not analyzed, but it is believed that these factors possibly influence compliance. Thus, further research should apply these factors to the research instrument by means of using different items than in current research.

Although the research has been conducted including three product groups and two geographic regions, the general applicability of the model on compliance is not proved. Therefore, the model must be tested on more target groups, markets and regions.

Further limitations are due to the choice to collect data using a survey. It can be presumed that the vendors are inclined to give social desired answers, which is supported by the high self-reported compliance values. With an objective to gain a more realistic view on the efficacy of compliance, it is recommend for further research to combine experimental research with quantitative research in order to understand why a person is inclined to (non)-comply.

5.4 Main conclusions

This research provides a broader perspective on compliance and offers a thought-provoking new framework and measurement instrument which may be useful across various areas of compliance. The measurement instrument and framework of compliance is addition to the existing compliance literature. As the compliance with age limits still depends on human factors, mistakes are made which demonstrate the failure to consistently comply with the age limits. This problem would be mostly solved through the wide implementation of electronic age verification systems. However, until the time that these systems are widely implemented, vendors have to be educated to ensure they are able, willing and motivated to comply in order to minimize human errors.

In summary the research has resulted in the following key findings :

- The most important determinants of self-reported compliance are 'familiarity with rules', 'perceived legal basis', 'personal acceptance' and 'attitude towards norms';
- These determinants can be strengthened by means of education by the government and store;
- The extent of influence of the determinants of compliance is similar between alcohol and tobacco;
- The compliance with age limits on gambling products is taken less serious in comparison to alcohol and tobacco products;
- Overall, vendors state that they are able, willing and they have the knowledge to comply.

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Appendix I: The questionnaire

VRAGENLIJST IN TE VULLEN DOOR KASSAMEDEWERKERS EN SERVICEBALIEMEDEWERKERS



Onderzoek naar
factoren en motieven van
naleving leeftijdsgrens bij
alcoholverkoop

*Onderzoek ten behoeve van de masterscriptie van Thomas Zoetman in het kader van
de opleiding Communicatie Wetenschappen aan de Universiteit Twente, onder begeleiding van
Dr. J.F. Gosselt & Dr. J.J. van Hoof.*

UNIVERSITEIT TWENTE.

Beste heer/mevrouw,

Bedankt voor het meewerken aan dit onderzoek over de handhaving van leeftijdsgrenzen. Dit onderzoek wordt gecoördineerd vanuit de Universiteit Twente.

Het onderzoek bestaat uit drie onderdelen. In het eerste gedeelte vragen wij u uw mening te geven over een aantal stellingen. Aan einde van de enquête vragen wij u een aantal algemene vragen te beantwoorden. We willen u vragen deze enquête naar uw persoonlijke mening in te vullen. Zorg dat u de vragenlijst **compleet** invult.

Deze vragenlijst wordt volledig anoniem verwerkt en uw antwoorden zullen geen invloed hebben op uw werk.

Hartelijk bedankt voor het meewerken aan dit onderzoek!

Met vriendelijke groeten,

Thomas Zoetman

Instructies vragenlijst

De enquête heeft betrekking op de verkoop van alcohol.

De term “minderjarig” dient gelezen te worden als “jonger dan 18 jaar”, omdat dit de wettelijke leeftijdsgrens is bij de verkoop van alcohol.

Uw mening van de vragen:

Op een schaal van 1 tot 5 kunt u aangeven in hoeverre u het eens bent met elke stelling. Hieronder volgt een overzicht van de betekenissen van de nummers:

1 = helemaal mee oneens

2 = mee oneens

3 = noch mee oneens/noch mee eens

4 = mee eens

5 = helemaal mee eens

Per stelling kunt u maar 1 vakje aankruisen.

Vul de vragenlijst alstublieft compleet in!

Vragen over de winkel

1 = helemaal mee oneens 2 = mee oneens 3 = noch mee oneens/noch mee eens 4 = mee eens 5 = helemaal mee eens

Ondersteuning en instructies

1 2 3 4 5

Voordat ik begon met mijn huidige werk, heb ik instructies gekregen over de handhaving van de minimumleeftijd bij alcoholverkoop.	☐	☐	☐	☐	☐
Er zijn instructies gegeven hoe te handelen wanneer een minderjarige de leeftijdsgrens van alcoholverkoop wil overtreden.	☐	☐	☐	☐	☐
Het is mij geleerd hoe ik moet handelen wanneer een minderjarige de leeftijdsgrens wil overtreden.	☐	☐	☐	☐	☐
Het is mij geleerd dat ik altijd naar het ID-bewijs moet vragen, als er twijfel bestaat over de leeftijd van de klant.	☐	☐	☐	☐	☐
Het management van de winkel heeft voldoende maatregelen getroffen binnen de werkomgeving zodat ik mij aan de leeftijdsgrens kan houden.	☐	☐	☐	☐	☐
In de winkel is voldoende ondersteuning van collega's aanwezig om me te helpen bij de naleving van de leeftijdsgrens.	☐	☐	☐	☐	☐
In de winkel krijg ik voldoende ondersteuning van mijn leidinggevende om me te helpen bij de naleving van de leeftijdsgrens.	☐	☐	☐	☐	☐
Indien ik een jongere aanspreek op de minimumleeftijd, zijn er voldoende veiligheidsmaatregelen getroffen in de winkel die me ondersteuning geven om mijn werk goed uit te voeren.	☐	☐	☐	☐	☐

Omgang met de leeftijdsgrens

1 2 3 4 5

In onze winkel houden we ons aan de minimumleeftijd van alcoholverkoop.	☐	☐	☐	☐	☐
Winkels zijn strafbaar als ze alcohol verkopen aan een minderjarige.	☐	☐	☐	☐	☐
Mijn collega's en ik weten genoeg over de regels van alcoholverkoop.	☐	☐	☐	☐	☐
Ik ken de regels van de winkel over alcoholverkoop goed.	☐	☐	☐	☐	☐
Nieuwe verkopers krijgen in onze winkel voldoende informatie over de Drank-en Horecawet.	☐	☐	☐	☐	☐
Er wordt in onze winkel niet over de minimumleeftijd van alcoholverkoop gesproken.	☐	☐	☐	☐	☐
In onze winkel wordt de minimumleeftijd van alcoholverkoop serieus genomen.	☐	☐	☐	☐	☐
Onze winkel steunt de richtlijnen van het de Drank-en Horecawet.	☐	☐	☐	☐	☐

Gevolgen van alcoholverkoop aan minderjarigen	1	2	3	4	5
Streng zijn bij alcoholverkoop aan een jongere is slecht voor ons klantenbestand.	☐	☐	☐	☐	☐
Als de winkel zich houdt aan de minimumleeftijd van alcoholverkoop, kost dat de winkel te veel geld.	☐	☐	☐	☐	☐
Als we ons houden aan de minimumleeftijd van alcoholverkoop, komt dat ten goede aan de naam van onze branche.	☐	☐	☐	☐	☐
Als we ons houden aan minimumleeftijd van alcoholverkoop, is dat goed voor de naam van onze winkel.	☐	☐	☐	☐	☐
Bij het overtreden van de leeftijdsgrens tijdens een controle, is de kans groot dat de winkel de vergunning kwijtraakt.	☐	☐	☐	☐	☐
Bij het overtreden van de leeftijdsgrens tijdens een controle, is de kans groot dat de winkel een boete opgelegd krijgt.	☐	☐	☐	☐	☐
De kans dat de winkel er bij een overtreding met enkel een waarschuwing vanaf komt is groot.	☐	☐	☐	☐	☐
Bij het overtreden van de leeftijdsgrens tijdens een controle, kan het zover komen dat de winkel gesloten moet worden.	☐	☐	☐	☐	☐
Ik denk dat de boetes die de winkel opgelegd kan krijgen bij een overtreding van de leeftijdsgrens erg hoog zijn.	☐	☐	☐	☐	☐
Het kan serieuze persoonlijke gevolgen hebben als ontdekt wordt dat ik me niet houd aan de leeftijdsgrens.	☐	☐	☐	☐	☐
De overheid maakt in de regel snel gebruik van hun mogelijkheden sancties op te leggen.	☐	☐	☐	☐	☐
De kans dat een controleur ten behoeve van de naleving van de Drank-en Horecawet onze winkel bezoekt, is klein.	☐	☐	☐	☐	☐
Als onze winkel alcohol zou verkopen aan een minderjarige, is er een grote kans dat dit ontdekt wordt.	☐	☐	☐	☐	☐
De kans dat iemand controleert of ik alcohol verkoop aan een minderjarige is klein.	☐	☐	☐	☐	☐
Als ik alcohol zou verkopen aan een minderjarige is de kans groot dat op dat moment gecontroleerd wordt.	☐	☐	☐	☐	☐

Vragen over uzelf

1 = helemaal mee oneens 2 = mee oneens 3 = noch mee oneens/noch mee eens 4 = mee eens 5 = helemaal mee eens

Mogelijke problemen met handhaving leeftijdsgrens

1 2 3 4 5

Ik vind het moeilijk om zelf de leeftijd van een jongere in te schatten.	☐	☐	☐	☐	☐
Veel jongeren hebben tegenwoordig een vals ID-bewijs.	☐	☐	☐	☐	☐
Het is moeilijk om als verkoper de leeftijd van een jongere te controleren.	☐	☐	☐	☐	☐
Ik krijg als verkoper problemen als ik een jongere vraag om een ID-bewijs.	☐	☐	☐	☐	☐
Ik krijg als verkoper problemen als ik vraag naar de leeftijd van een jongere.	☐	☐	☐	☐	☐
Ik krijg als verkoper problemen als ik een jongere weiger alcohol te verkopen.	☐	☐	☐	☐	☐
Ik vind het moeilijk om alcohol te weigeren tijdens een groepsverkoop wanneer niet iedereen meerderjarig is.	☐	☐	☐	☐	☐
Minderjarigen accepteren de minimumleeftijdsgrenzen niet.	☐	☐	☐	☐	☐
Ik ben bang om alcohol te verkopen vanwege mogelijke agressie van een klant.	☐	☐	☐	☐	☐
Wanneer het erg druk is in de winkel heb ik geen tijd om de leeftijd en ID-bewijs te controleren.	☐	☐	☐	☐	☐
Het is moeilijk om de verkoop van alcohol te weigeren aan een minderjarige, als diegene beweert dat het niet voor eigen gebruik is.	☐	☐	☐	☐	☐
Wanneer een meerderjarige alcohol wil kopen, en ik het vermoeden heb dat de alcohol eigenlijk bedoeld is voor een minderjarige, vind ik het moeilijk om de verkoop te weigeren.	☐	☐	☐	☐	☐
Het is lastig om de minimumleeftijd te handhaven als er een klant binnen dezelfde leeftijdscategorie als ikzelf valt.	☐	☐	☐	☐	☐

Het toepassen van de leeftijdsgrens

1 2 3 4 5

Als een minderjarige alcohol wil kopen, ben ik als verkoper toch verplicht om dit te verkopen.	☐	☐	☐	☐	☐
Verkoop aan minderjarigen is niet strafbaar omdat de leeftijdsgrens van 18 jaar slechts een advies is.	☐	☐	☐	☐	☐
Alcohol mag niet verkocht worden aan een minderjarige.	☐	☐	☐	☐	☐
De regels van de Drank-en Horecawet zijn te gecompliceerd.	☐	☐	☐	☐	☐
Er zijn teveel regels voor de verkoop van alcohol.	☐	☐	☐	☐	☐

Als ik alcohol verkoop, let ik niet op de minimumleeftijd.	☐	☐	☐	☐	☐
Ik verkoop geen alcohol aan een minderjarige.	☐	☐	☐	☐	☐
Niemand verwacht dat ik als verkoper een jongere vraag naar zijn of haar leeftijd of ID-bewijs.	☐	☐	☐	☐	☐
Als ik twijfel of een klant oud genoeg is, verkoop ik alcohol alleen na identificatie.	☐	☐	☐	☐	☐
Ik houd mij aan de wettelijke leeftijdsgrens van alcoholverkoop.	☐	☐	☐	☐	☐
Op een schaal van 1 tot 10 geef ik mijzelf het volgende cijfer voor het handhaven van de minimumleeftijd van alcoholverkoop.					
1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
7 ☐	8 ☐	9 ☐	10 ☐		
Uw mening over de leeftijdsgrens	1	2	3	4	5
Ik vind dat de minimumleeftijd op alcohol nut heeft.	☐	☐	☐	☐	☐
Ik vind dat de minimumleeftijd op alcohol juist is.	☐	☐	☐	☐	☐
Ik vind de regels voor alcohol te streng als het gaat om de minimumleeftijd.	☐	☐	☐	☐	☐
Ik vind dat jongeren door regelgeving beschermd moeten worden tegen alcohol.	☐	☐	☐	☐	☐
Gebruik van alcohol is schadelijk voor de gezondheid van de gebruiker.	☐	☐	☐	☐	☐
De risico's van overmatig alcoholgebruik zijn niet groot.	☐	☐	☐	☐	☐
Voor een jongere is alcohol <u>nog</u> schadelijker dan voor een volwassene.	☐	☐	☐	☐	☐
Alcoholgebruik kan leiden tot verslaving.	☐	☐	☐	☐	☐
Ik vind dat de primaire verantwoordelijkheid niet bij de winkels ligt als een minderjarige alcohol wil kopen.	☐	☐	☐	☐	☐
Ik vind dat ik als verkoper verantwoordelijk ben voor de alcohol die een minderjarige koopt.	☐	☐	☐	☐	☐
Ik vind dat winkels verantwoordelijk zijn voor de alcohol die een minderjarige koopt.	☐	☐	☐	☐	☐
Ik vind dat een minderjarige zelf verantwoordelijk is voor de alcohol die hij/zij koopt.	☐	☐	☐	☐	☐
Ik vind dat ik me aan de regels hoor te houden.	☐	☐	☐	☐	☐
Ik doe geen dingen die mij in de problemen kunnen brengen.	☐	☐	☐	☐	☐
Ik bepaal zelf aan welke regels ik me houd en aan welke regels niet.	☐	☐	☐	☐	☐

Regels zijn regels en daar heb je je aan te houden, ook als je het er niet mee eens bent. ☐ ☐ ☐ ☐ ☐

Vragen over uw collega's

1 = helemaal mee oneens 2 = mee oneens 3 = noch mee oneens/noch mee eens 4 = mee eens 5 = helemaal mee eens

	1	2	3	4	5
Mijn directe collega's weten te weinig af van de wetten en regels van alcoholverkoop.	☐	☐	☐	☐	☐
Als ik alcohol zou verkopen aan een minderjarige is de kans groot dat mijn collega's mij hierop zouden aanspreken.	☐	☐	☐	☐	☐
Mijn collega's zouden het niet erg vinden als ik de minimumleeftijd zou negeren.	☐	☐	☐	☐	☐
Het management van de winkel vindt het niet erg als het personeel alcohol verkoopt aan een minderjarige.	☐	☐	☐	☐	☐
Het management van de winkel zou het personeel berispen wanneer zij de minimumleeftijd negeren.	☐	☐	☐	☐	☐
Problemen met de naleving van de minimumleeftijd worden in ons winkel besproken.	☐	☐	☐	☐	☐
In onze winkel weten alle verkopers dat ze bij alcoholverkoop rekening moeten houden met de Drank-en Horecawet.	☐	☐	☐	☐	☐
In onze winkel vinden de meeste collega's dat de minimumleeftijd op alcohol een goede zaak is.	☐	☐	☐	☐	☐
Als mijn baas ontdekt dat ik me niet houd aan de minimumleeftijd neemt hij of zij een maatregel.	☐	☐	☐	☐	☐

Algemene vragen

Wat is uw geslacht? ☐ Man ☐ Vrouw

Wat is uw leeftijd?

Hoe lang werkt u al bij dit bedrijf?

Welke van onderstaande omschrijvingen sluit het beste aan bij uw functie?

☐ Caissière

☐ Hoofd caissière

☐ Teamleider

☐ Filiaalmanager

☐ Anders, namelijk:

Hoe lang werkt u in deze functie?

Heeft u kinderen? ☐ Ja ☐ Nee

Heeft u enige verkooptraining gehad? ☐ Ja ☐ Nee

***Dit is het einde van de vragenlijst. Hartelijk
bedankt voor uw medewerking!***

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Appendix II: Process of data collection

Process of data collection

Phase	Action
1. Pre-test	A familiar supermarket is approached. Five surveys were completed for each age restricted product group. The alpha's of the most constructs was higher than 0.6. The constructs and the associated items with an alpha lower than 0.6, were revised and formulated differently where needed.
2. Test: First approach Stores data collection	1. Sent a letter to 10 supermarkets, with a request for participation and enclosed 10 surveys. 2. Telephoned 10 supermarkets requesting participation (5 in Amsterdam, 5 in Twente). 3. Sent another letter to 10 supermarkets with a request for participation and enclosed 10 surveys. <i>This approach yielded 20 completed surveys</i>
3. Data collection calls and mail.	1. Telephoned approximately 300 supermarkets requesting participation. 2. Sent 160 letters containing 10 surveys to the participating supermarkets. 3. Conducted follow-up telephone calls with supermarkets that had not returned yet the surveys. 4. Sent additional surveys to 60 stores whose declared that the original letter never arrived or that the survey's had been lost. <i>This approach yielded 87 completed surveys</i>
<i>As four months of approaching potential respondents by telephone and by post yielded only 107 surveys, a different approach was subsequently employed. The surveys were posted online and the supermarkets were approached personally in the store.</i>	
4. Internet survey	Using the internet tool 'Qualtrics' an online survey was developed and was sent to 10 supermarkets who indicated that they still have not received an envelope. <i>This approach yielded 13 completed surveys</i>
5. Personal approach	Vendors were personally asked at the service counter and the cash desk to complete the survey. These respondents were instructed that the surveys were to be collected later that day. <i>This approach yielded 144 completed surveys</i>

Appendix III: Unreliable constructs

Constructs of problem

Three constructs did not have the desired reliability, and therefore the constructs “knowledge effects”, “costs and benefits” and “non-government” control are not included in the data analysis. The individual items of both constructs are discussed below.

Knowledge effects risky product

A possible explanation of the insufficient alpha of this construct are the differences of the harmful effects between alcohol, lottery tickets and tobacco, causing the vendors responding inconsistent between the individual product groups. Therefore, the table 17 gives the describing results for each item. The table shows the percentages of agreeing respondents (score 4 + score 5) and disagreeing respondents (score 1 + score 2).

Table 11: *Items knowledge effects*

Product Group	Disagree	Agree	Item statement
<i>Alcohol</i>	5%	83%	“The use of ‘risky product’ is harmful to the health of the user.”
<i>Tobacco</i>	3%	91%	Alcohol and tobacco are considered to be more harmful to the health than gambling.
<i>Lottery</i>	17%	50%	
<i>Alcohol</i>	83%	4%	“The risks of excessive ‘risky product’ use are not huge.”
<i>Tobacco</i>	78%	12%	The risks of excessive use for alcohol and tobacco are considered as more risky than for
<i>Lottery</i>	58%	12%	gambling.
<i>Alcohol</i>	10%	74%	“For a young person ‘risky product’ is even more harmful than the ‘risky product’ is for an
<i>Tobacco</i>	20%	47%	adult.” Alcohol is considered to be more harmful for younger people than tobacco and
<i>Lottery</i>	13%	56%	lottery tickets.
<i>Alcohol</i>	1%	90%	“Use of ‘risky product’ may lead to addiction.”
<i>Tobacco</i>	5%	88%	The three product groups are all strongly considered to be addicting.
<i>Lottery</i>	3%	94%	

Costs and benefits

In general compliance has not been seen as harmful in terms of costs and benefits to the store, however, it has been seen as beneficial according to image.

Table 12: *costs and benefits*

Product Group	Disagree	Agree	Item statement
<i>Alcohol</i>	72%	12%	“Severity by the sales of ‘risky product’ is bad for our customer base.”
<i>Tobacco</i>	70%	18%	Severity by the sales is not considered to be bad for the customer base.
<i>Lottery</i>	73%	20%	
<i>Alcohol</i>	73%	11%	
<i>Tobacco</i>	68%	15%	“If the store complies to the minimum age limit for ‘risky product’ sales, it costs the store
<i>Lottery</i>	80%	8%	too much money.” Compliance of age restrictions is not considered as too costly.
<i>Alcohol</i>	9%	80%	“If we comply to the minimum age limit for ‘risky product’ sales, it will benefit the name of
<i>Tobacco</i>	8%	84%	our industry.” Compliance of age limits is considered as beneficial for the name of the
<i>Lottery</i>	19%	67%	whole industry.
<i>Alcohol</i>	3%	88%	“If we comply to the minimum age of the ‘risky product’ sales, it will benefit to the name of
<i>Tobacco</i>	2%	93%	our store.” Compliance of the age limits is considered as beneficial for the name of the
<i>Lottery</i>	3%	83%	store.

Table 13: Non-government control

<i>Disagree</i>	<i>Agree</i>	<i>Item Statement</i>
9%	80%	Als ik alcohol zou verkopen aan een minderjarige is de kans groot dat mijn collega's mij hierop zouden aanspreken.
8%	84%	Mijn collega's zouden het niet erg vinden als ik de minimumleeftijd zou negeren.
8%	91%	Het management van de winkel vindt het niet erg als het personeel alcohol verkoopt aan een minderjarige.
19%	74%	Het management van de winkel zou het personeel berispen wanneer zij de minimumleeftijd negeren.

Appendix IV: Overview scores high-low

Table 15: Overview scores high to low

<i>Constructs</i>	<i>Mean Total</i>	<i>Construct Alcohol mean</i>	<i>Construct Tobacco mean</i>	<i>Construct Lottery mean</i>
1. Perceived Legal Basis	4.64	1. 4.67	1. 4.70	1. 4.50
2. Compliance	4.55	3. 4.59	2. 4.68	5. 4.35
3. Training	4.53	2. 4.57	3. 4.62	2. 4.33
4. Attitude Towards Norms	4.39	7. 4.41	5. 4.46	3. 4.32
5. Support In Store	4.39	6. 4.40	6. 4.46	4. 4.32
6. Familiarity With Rules	4.36	4. 4.38	7. 4.45	6. 4.17
7. Organizational Acceptance	4.30	5. 4.36	4. 4.44	8. 3.95*
8. Personal Acceptance	4.01*	8. 4.04*	8. 4.01*	7. 3.91*
9. Sanctions	3.93*	9. 3.99*	10. 3.95*	10. 3.84*
10. Clarity Of Rules	3.81*	12. 3.89*	9. 3.92*	11. 3.83*
11. Practical Feasibility	3.81*	10. 3.80*	11. 3.84*	9. 3.61*
12. External Control	3.63*	11. 3.77*	12. 3.59*	13. 3.34*
13. Perceived Responsibility	3.08*	13. 3.02*	13. 2.96*	12. 3.33*

* construct > total mean score 4.16

Appendix V: Framework of Compliance

Table 10, Framework of compliance

Applicator (Behavior)	Regulator (policy)		
	Regulation	Enforcement	Education
	Ability <i>1. Feasibility of Regulation</i> The extent to which the vendor has the practical ability to comply with the regulation. Specifically, what is the practicability of the regulation?	<i>2. Ignorability of Enforcement</i> The extent to which the (instant) enforcement of the regulator (government) influences the ability of (non)-compliance.	<i>3. Application Training</i> The extent to which the vendor is trained and informed to proceed the regulation.
	Knowledge <i>4. Clarity of Regulation</i> The extent to which the rules are clear, understandable and not too complicated to comply.	<i>5. External Control</i> The extent to which the vendor is aware about when and how the enforcement takes place.	<i>6. Experience with rules</i> The extent to which the vendor is experienced and has the knowledge to comply.
Motivation	<i>7. Law Abidance</i> The extent to which the regulator and their policy are seen as reasonable by the vendor.	<i>8. Sanctions</i> The extent to which the vendor is motivated to comply due the eventual consequences and sanctions of non-compliance (external motivations).	<i>9. Organizational Attitude</i> The extent to which the policy is accepted throughout the organization of the vendor (Caused by the communication and education in order to create acceptance and support by the vendor about the policy and regulation).