

Let consumers accept cookies

The effect of different appeals on the likelihood to accept online behavioural advertising

Author: Daan Ouwehand

Email: Daanouwehand94@outlook.com

Supervisor: Arash Yazdiha

Second assessor: Vijay Hariharan

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Specialization: Marketing

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Abstract

This thesis contributes to research on acceptance of online behavioural advertising by using reciprocity and relevance appeals. The online scenario-based experiment which was set up with 331 respondents provides evidence that reciprocity appeals can have a good influence on the acceptance of online behavioural advertising. The results of this thesis are in line with previous research that indicated that by using a reciprocity appeal there is a higher chance of accepting online behavioural retargeting in comparison with the use of a relevance appeal. However, in our study this effect of using a reciprocity appeal was only effective on consumers with a negative attitude towards advertising. Attitude towards advertising on itself had a positive effect on the acceptance of online behavioural advertising, in that a positive attitude towards advertising results in a higher level of acceptance in comparison with a negative attitude towards advertising. Making use of a relevance appeal resulted in the lowest acceptance of online behavioural advertising, the strongest negative effect of the relevance appeal was found in female consumers. Findings of this study show that Dutch consumers are not influenced easily by appeals which pop-up on websites; this is not moderated by privacy concerns and need for distributive justice.

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1. Introduction

1.1 Problem statement and research objectives/questions

We live in a time where online advertisements are of great importance for our online based world. People tend to dislike advertisements, but without online advertisements the whole “free” internet would collapse. To reach consumers who are surfing the web, companies use a lot of different online advertising ways such as: banner ads, buttons, pop-up ads, paid text links, sponsorship, target sites, e-mail ads and so forth (Zeff & Aronson, 1999).

The difference between advertisement on traditional media and internet is caused by the fact that consumers use the internet in other ways than traditional media. Consumers use internet to actively search for information, to fulfil tasks and for recreation, where traditional media are mostly used for recreational use (Li, Edwards, & Lee, 2002). Because consumers also use internet as a goal-/ task medium, an aversion against online advertisement has developed. This is illustrated by a low click through rate on banner ads, which is typically less than 1% (Double Click, 2017). Given that the consumers’ responses to online ads are low, companies try new sorts of advertisement made possible by today’s technology such as **online behavioural advertising (OBA)**.

Online behavioural advertising describes a broad set of activities companies use to collect information about consumers’ online activity (e.g. webpages consumers visit) and use this information to show ads that are more relevant to individual consumers. But to do this, advertisers need a way to track individual consumers. This tracking of consumers is based on little bits of code companies put on their site referred as “**cookies**”. These cookies make tracking possible and this is where consumers get sceptical. Two-thirds of U.S. adults reject behavioural advertising based on their prior online behaviour (Turrow, King, Hoofnagle, Bleakly, & Hennessy, 2010). Consumers can get a feeling that companies know too much about them and follow them everywhere on the internet, which results in **privacy concerns**.

To reduce these privacy concerns and to protect consumers from privacy breaches, a Dutch cookie law was implemented in 2012, which resulted in a so called “**cookie-wall**” drama in 2013 (Oosterveer, 2015), two examples of these cookie-walls are given in Appendix A. Every website had to inform consumers that cookies were used to observe and track visitors of the website, websites did this by adding a pop-up message on their website, noting that cookies

were used. If consumers would not accept these cookies a light version of the site had to be accessible, but in practice this agreement was not met. Dutch consumers just had to accept the cookies, otherwise they could not use the website or they faced a website that did not work.

Not only the Dutch government noticed the problem of online privacy for consumers. In April 2016, the European Union adopted a new regulation regarding online data protection called the **General Data Protection Regulation** (from now on mentioned as GDPR), which became enforceable on the 25th of May 2018.

In the GDPR, the EU states that companies who use the online personal data of consumers without them knowing it are violating the privacy of consumers. To protect the privacy of consumers, the GDPR ensures that companies must be more transparent on how and what they collect. One of the changes that comes with the GDPR is that consumers can choose whether the website can track their online behaviour or not.

Therefore, it should become a goal for marketers to convince consumers to accept their cookies, this will probably result in pop-up screens where the consumers has to accept the cookies. This is especially relevant for companies like news sites as NU.nl, whose income is based purely on online ads. For these advertising-supported websites it is critical to address the challenges they face proactively. The current industry practice is to use a utilitarian argument related to the **relevance** of the ads shown to increase acceptance of cookies, but Schumann Wangenheim & Groene (2014) discovered that using a **reciprocity** appeal is generally more effective than the industry standard (Schumann, Wangenheim, & Groene, 2014). Therefore, companies in the Netherlands are possibly using the wrong method to persuade Dutch consumers to accept their cookies and are missing out or going to miss out on their advertisement revenues.

This problem description results in the following research question:

To what extent do reciprocity and relevance, appeals increase the likelihood of ad acceptance, and is this relationship moderated by privacy related variables?

1.2 Academic and Managerial Relevance

There already is a decent amount of research about online advertisement, targeted on the effectiveness of online ads (Bleier & Eisenbeiss, 2015; Lambrecht & Tucker, 2013; Arora, et al., 2008; Aguirre, Mahr, Grewal, Ruyter, & Wetzels, 2015). Furthermore, there is also research done on ad personalization, which concluded that ad personalization has a positive effect on advertisement goals, but can also be harmful for advertisers because of the potential to evoke privacy concerns (Sundar & Marathe, 2010; Tam & Ho, 2006). Furthermore, research was done on the way to convince consumers to accept cookies, and thus accept OBA (Schumann, Wangenheim, & Groene, 2014).

This research on the acceptance of OBA was conducted in Germany, where consumers tend to be highly protective of their personal data. Schumann, Wangenheim and Groene tested whether the use of reciprocity appeals had a positive effect on the likelihood of accepting cookies in comparison with the industry standard of using relevance appeals. The research, in which they conducted three studies to support their hypothesis, concluded that using reciprocity appeals is more efficient for most websites in Germany.

Consumers in the Netherlands tend to have less privacy concerns than German consumers, but research done by Ruigrok Netpanel shows that online privacy concerns by all Dutch consumer groups are increasing in the last two years, especially the privacy concerns of younger Dutch consumers in the age groups 14-20(26%→42%) and 21-35(38%→55%). They are concerned that their online behaviour and personal data could be used by parties which they do not foresee (Ruigrok, 2017). This may cause an affection against online ads, which could lead to a big group of consumers whom will decline cookies.

The intended target audience of this thesis are marketing managers who use online advertisements, especially managers who work for companies which are hosting advertising-supported websites, which are dependent on the ad revenue. These managers are going to face some challenges in the online data collection aspect which they never had to worry about. Thus, it will be important for them to understand which method is the most efficient for the Dutch market. Without the knowledge on how to convince consumers to accept their cookies, they can expect a negative influence on their advertising revenue. This can result in a negative experience for consumers as well as for companies, where they possibly must change their income method from advertisements to a subscription-based revenue.

1.3 Structure of thesis

In this paragraph the structure of this thesis is explained. Beginning with the theory and hypothesis, this section contains a comprehensive literature review that concludes in the hypotheses the research in this thesis will test. To test this hypothesis a conceptual framework, with the dependent and independent variables is described. Then, the methodology of the pre-test and actual scenario-based experiment is given. Next the data of the experiment is reviewed, followed by the results of the experiment, which ends up in the conclusion of this paper. Lastly, the references and appendices can be found at the end of this thesis.

2. Theory and hypothesis

2.1 literature review

In the following chapter a literature review is given. The first part of the literature review consists of contextual background information about personalized online advertisement. Second, a review of existing literature of the main variables in this thesis is given; the use of a relevance argument and the use of a reciprocity argument. Third, a review of the existing literature on the moderating variables of this thesis is given which consists of: privacy concerns, distributive justice and the attitude towards advertising. This literature review describes all the theory that is needed to fully understand this thesis.

2.1.1 Background information: Personalized online advertisement

Personalized online advertisement is a relatively new method of online advertisement. The goal of personalized online advertisement is to show the right content to the right people at the right time (Tam & Ho, 2006). Companies use personalization in both offline and online environments, but personalization becomes more applicable in online environments. Big retailers like Amazon use collaborative filtering, where they compare similarities of consumers with other users, to provide personalized recommendations (Montgomery & Smith, 2009).

There are mainly three options regarding online advertisement: (Arora, et al., 2008)

1. No personalization, where the ad is the same for every consumer.
2. By segment personalization, where ads are personalized on segment. This is done if the firm only shows an ad to e.g. only 20-year-old males in Rotterdam.
3. One-to-one personalization, where the ad is made specific for one consumer.

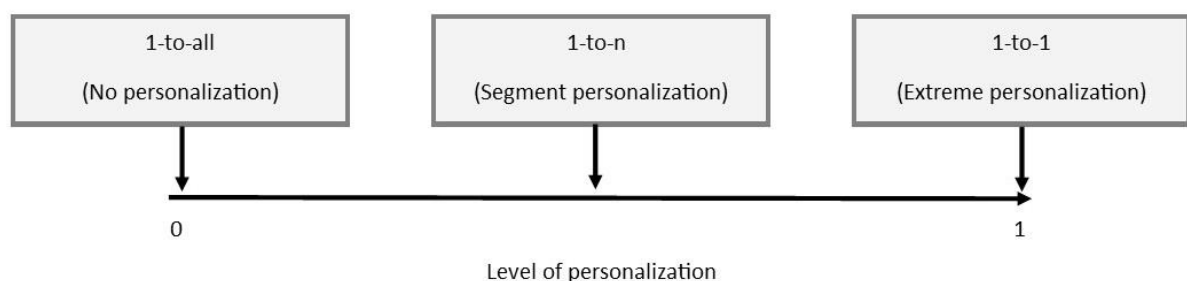


figure 1 - Different levels of personalization

This research focuses on the last one, which firms do by dynamic retargeting, or in other words OBA. Firms use online personal information (among other things; demographics, site visits, online search behaviour and IP), which consumers provide to them via cookies when browsing their website, to provide individually personalized banner ads (Bleier & Eisenbeiss, 2015). Online retailers' partner with publishers such as Google and Yahoo to collect consumer data. With this data the retailers can provide personalized ads to the consumers, reflecting user's online behaviour (Goldfarb & Tucker, 2011). These banner ads are ads which for example contain a specific product a consumer searched for in an online store.

Personalization could be confused with customization, but there are a couple of differences. Where customization is requested by the consumer, personalization is done by the marketer on behalf of the consumer, which makes personalization more refined (Montgomery & Smith, 2009). A company can use personalization to deliver an offer to a specific customer based on detailed information gathered by the company, whereas customization refers to the place where a consumers can customize a product that meets their preferences (Arora, et al., 2008).

2.1.1.1 Dynamic retargeting

Furthermore, it is also important to know that dynamic retargeting is not the same as targeting or generic retargeting. Targeting is a way to direct ads to people with a certain profile, for example people who had ever visited an online clothing retailer site. Whereas generic retargeting shows a generic ad to people who had visited, for instance, Zalando.

Generic ads do not mention specific products which a consumer searched for, in contrast with dynamic retargeting which features those specific products (Lambrecht & Tucker, 2013). So generic retargeting is a form of targeting where information of previous web surfing activities of individuals is used to offer personalized ads to those individuals. Nevertheless, the level of personalization is not that high, it will only show an advertisement with the name of the company, not with the actual products an individual searched for on that company's website. To increase the level of personalization, by adding a previous searched for product, dynamic retargeting is used.

2.1.1.2 Key players in the online ad industry

The last paragraph covered the difference between dynamic retargeting and other forms of targeting; this paragraph describes the key players in the online advertising industry. There

are two main players in the industry. At the demand side of the industry there are the advertisers who want to advertise their products or services to consumers. At the supply side there are the publishers, sites that offer ad space for the advertisers.

And there are two players which are very important for the demand and supply parties, the ad platforms and the ad agencies.

Ad platforms, like Google and Facebook, make it possible for the ad agencies to deliver the ads to the right individuals. The ad platforms collect data of consumers who surf online, then use this data to show ads to consumers. The advertisers want to reach people who are interested in their product or service, they use the space of the publishers, the experience of the ad agencies and the information of the ad platforms.

Ad agencies are the players in this business that connect the supply side with the demand site, companies that make online advertisement campaigns for the advertisers. The ad agencies make use of their experience to target the ad as close as possible to the preferences of the wanted target group. For instance, if a company wants to advertise their new soccer shoes, they go to an ad agency and tell them their preferences. The ad agency makes an advertisement campaign and selects the people who they think are interested in buying soccer shoes. They use an ad platform to set-up the ad and select the interests of the target group they want to reach. The ad-platform has the data to match the interest given by the agency with individuals surfing the web, so they place the ad on the sites of the publisher. A graphical display of the process of the key players is given in figure 1 below.

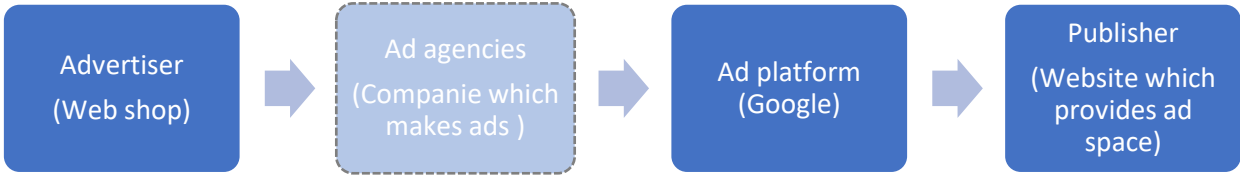


figure 2 - Key players in online ad industry

2.1.1.3 Process of dynamic retargeting

When a company or a hired ad-agency has made an advertisement and set up the target group it wants to reach, the ad goes live. When the ad goes live the ad-platforms use algorithms to reach the right consumers. One method used by Google and Facebook is real-time bidding. This way of bidding for ad space is called programmatic buying (Yuan, Wang, & Zhao, 2013).

Instead of buying bulk of advertising space, programmatic buying mimics stock exchanges and utilizes computer algorithms to automatically buy and sell ads in real-time. This way the ad-agencies efficient target specific people based on gathered information about them and dramatically increases the effectiveness of banner ads. This all happens on real-time ad exchanges where companies or ad-agencies bid for the advertisement space (Lambrecht & Tucker, 2013).

In order to reach the right target audience, information is needed. This information comes mostly in the form of cookies. There are multiple types of cookies but all of them can be divided in the following three categories (Verisign, 2018):

1. Session cookies, which are cookies that are deleted when a consumer closes his browser, they are used for example on web-shops, so consumers can browse the site without losing the inventory of their shopping cart.
2. Permanent cookies, which are cookies that persist even when the browser is closed, however they must have an expiration date. These permanent cookies are used to remember passwords of consumers, so they do not have to enter their password again the next time they want to login on the website.
3. Third-party cookies, which are cookies which are installed by other parties such as advertisers or previous visited websites. By using these cookies ad-agencies can follow the consumer and tailor personalized online ads for them.

All these cookies are collected when consumers surf the internet and this data is used to make OBA possible.

2.1.2 Relevance argument

Companies try to increase the acceptance of cookies by using a strategy almost all big players pursue, they inform consumers how targeting makes advertisements more relevant to consumers. They use the relevance of ads to persuade consumers to accept their cookies, so advertising relevance is seen as the go to strategy right now. An ad is defined as relevant when consumers find the ad useful, interesting and relevant to their interest. If consumers notice all these three characteristics in an ad, then they consider the ad worthy of their attention (Laczniak & Muehling, 1993). An example of a relevant ad is an advertisement which features

Adidas shoes, this ad is tailored to a woman who just searched for Adidas shoes on a shoe website.

This relevance approach triggers the social exchange theory (Thibaut & Kelley, 1959), consumers evaluate the social exchanges as in: what they receive in exchange for what they give to the other party. This results in behaviour where people only participate in social exchanges when they expect to receive more utility, or at least receive utility which is equal to the cost they make in the exchange. Accordingly, consumers only should be willing to accept the exchange when the costs in privacy matters is lower than the benefits they receive from the ad.

Research on direct mail has shown that consumers face a privacy calculus. They engage in the following privacy calculus: when they are promised to get an increase in relevance based advertisement in exchange for personal information, consumers are more prepared to give their personal information (Culnan, 1995; Milne, 1997). More research on direct mail concludes that respondents would rather have a few relevant mails than many irrelevant mails (Milne & Gordon, 1993). The big advantage of targeting is the fact that it results in more relevant ads, which is an advantage to both sides (Alreck & Settle, 2007). Therefore, the promise of more relevant ads online should be enough for consumers to accept the cookies of a website. However, using such a utilitarian argument to convince consumers might be not that effective, because the sensitivity of the personal information consumers needs to disclose is high and surpasses the utilitarian benefits of some consumers (Mothersbaugh, Foxx, Beatty, & Wang, 2012). A utilitarian approach also excludes other motivations which could help to convince consumers to accept cookies, such as using reciprocity as motivator.

2.1.3 Reciprocity argument

Reciprocity usually comes from a feeling of indebtedness which consumers can change by returning a favour (Schumann, Wangenheim, & Groene, 2014; Greenberg M. S., 1980). Charity organizations already make use of the need for reciprocity, they make use of small presents (like a pencil) as they try to convince consumers to support the charity (Falk, 2007). This strategy can evoke a feeling of indebtedness from the consumers, so that they feel the need to provide something back (e.g., donations). If Free web services would inform consumers how their service works, they could appeal effectively to the consumers which can evoke the

need for distributive justice (e.g., “We need your support! You do not need to pay for our services, we fund our organization by targeted advertisement”).

The use of this strategy is defined as a reciprocity appeal approach, where the website uses a social exchange, where the site is the party that gives value for free to the consumers. This social exchange should elicit a feeling of indebtedness, which could lead to the need to reciprocate, by giving the website personal data which they can use to target their ads and so finance their company. A more detailed view on distributive justice is given in §2.1.6.

By using this strategy website owners exploit the need for reciprocity, which requires the consumers to return benefits for benefits they already received (Gouldner, 1960). Therefore, consumers should see the targeted advertising as a *quid pro quo* that they accept in return for the free service the website provides. In addition to the charity example where companies use reciprocity in their example, research was also done on pay-what-you-want pricing which shows that consumers do not expect zero costs for free services (Kim, Natter, & Spann, 2009). People have different motivational reasons to reciprocate, a couple of reasons are: to suit their social norms, to retain their positive self-image or to retain a good impression of themselves with others (Alpizar, Carlsson, & Johansson-Stenman, 2008). However, the anonymous environment of the internet may have a negative effect on the need to reciprocate, because consumers cannot compare themselves with other consumers. Nonetheless, the motive of maintaining a positive self-image could be strong enough for the reciprocity arguments to still be a proper way to increase the acceptance of targeted online advertisement (Schumann, Wangenheim, & Groene, 2014).

There are three reasons why using reciprocity can be the more effective argument in comparison with the relevance argument. First, one of the main determinants of cooperative behaviour is the extent to which a party has already received value from the counterpart, which is the free content of the website (Schumann, Wangenheim, & Groene, 2014). By making use of this fact, so by highlighting the free web service, a reciprocity appeal effectively shows the benefits the consumers already got. If the consumers read what the received benefits are, they can properly evaluate their part in the exchange. This is contrary to the relevance argument, where websites refer to benefits they may receive in the near future (i.e., relevant ads), which cannot be evaluated by consumers at that moment. Therefore, the benefits related to the relevance appeal are not applicable at that time.

Second, in social exchanges the perceived costs for both parties is also a determinant of making the exchanges (Ames, Flynn, & Weber, 2004). The exchanges need to be fair. To test this, the costs of both parties are evaluated (Aggarwal, 2004). The reciprocity argument should be more effective here as well, when the argument refers to the websites' core service. Users of the website should perceive and acknowledge that providing the free service is producing high costs for the website, particularly when it is compared with the relatively low costs of providing better advertisements.

The third reason why the reciprocity argument should be better than the relevance argument is based upon the fact that people tend to be more motivated to cooperate if the exchange is based on a reciprocity manner than on a negotiated manner. People even tend to be more cooperative if the reward of the negotiated exchange is higher than the reciprocate exchange.

Research done by James and Bolstein (1992) discovered that people are more likely to participate in a long survey if they get a \$5 gift if they start the survey, as opposed to a possibility of a gift of \$50 on completing the survey. The reason why people cooperate more when a reciprocity exchange is used is because of peoples' sense of indebtedness and obligation to achieve distributive justice. Distributive justice is experienced by a party when he or she perceives the benefits as proportional to the investment made. In contrast to this, in the case of maybe getting a gift when completing the survey, people will only complete the survey based on how favourable they consider the offer (Heyman & Ariely, 2004). If consumers are asked to provide personal information online a utilitarian promise of customization benefits is not sufficient (Mothersbaugh, Foxx, Beatty, & Wang, 2012). These three arguments in combination make the reciprocity argument a more effective way than the relevance argument. But there are more factors that influence the likelihood of accepting OBA, such as online privacy concerns which can influence the online decision of accepting OBA or not.

2.1.4 Privacy concerns

When surfing on the internet data of consumers is collected by the sites they visit, this happens overtly and covertly. Covertly gathering data of consumers can evoke privacy concerns, but even overtly gathering data could lead to privacy concerns if the data is not handled with care. Online privacy concerns can influence the response and acceptance of online advertising and is therefore one of the most important issues in today's technology-based environment (Chellappa & Sin, 2005; Sheng, Nah, & Siau, 2008). Privacy concerns can

be evoked by ad personalization because consumers notice that their online information is collected and used to personalize the ad they encounter (Bleier & Eisenbeiss, 2015).

The concept of user privacy is generally defined as the ability of an individual to control the acquisition of their personal information and the usage of this information (Westin, 1967). Information privacy concerns, on the other hand, centre around the inputs, use, and control of data (Campbell, 1997). In an article by Smith et al. (1996) a few examples of these concerns are given; improper access by unauthorized individuals, unauthorized secondary use of data, combining data from multiple sources and theft of personal data.

The performance of IT-enabled personalization strongly depends on the gathering of personal online information. Due to this fact the Personalization-privacy paradox (PPP) was introduced. Existing literature about the PPP describes it as follows: The thin line between marketers and developers using the information of consumers to personalize the service they provide on the one hand, and the growing concerns from the consumers regarding their privacy, which could give a reason to not use these services (Angst & Argawal, 2009) on the other hand. Furthermore, Aguirre (2015) mentions that personalization can be effective or ineffective, depending on the context. This trade-off becomes important when firms must choose if they are willing to invest in more personalized ads but could face the risk that the ad personalization influences the marketing campaign negatively due to growing privacy concerns (Chellappa & Sin, 2005). Nevertheless, Sutanto et al. (2013) showed that implementing measures which enhance the feeling of privacy results in a higher acceptance of personalization, therefore the negative effect of personalization can be minimized.

Another interesting concept in the privacy sector is the privacy paradox (Ackerman, Cranor, & Reagle, 1999; Sweat, 2000). This paradox occurs where people think or say that they have strong privacy concerns, whereas their online behaviour shows the contrary. Nevertheless, privacy concerns can have a negative effect on the attitude towards online advertising, which can result in negative effects on the ad and advertisers. There are also factors that can have a positive effect on the likelihood of accepting OBA, especially when used in combination with a reciprocity appeal such as the need for distributive justice.

2.1.5 Distributive justice

As mentioned in §2.1.2 distributive justice is one of the key factors when the reciprocity argument is used. Therefore, this section gives a more thorough review of the literature on distributive justice.

Distributive justice is one of the three dimensions of justice, the other two dimensions are procedural and interactional justice. This thesis focuses on distributive justice because it is closely related to privacy concerns as well as to reciprocity, whereas procedural and interactional justice are only related to privacy concerns. Procedural justice is perceived as the fairness of used procedures in a certain transaction, for example, how the data of consumers is collected. Interactional justice refers to the fairness of the treatments consumers get from firms in a transaction, as an example, when firms tell consumers that they do not share their data with third parties, but still share it. In the next paragraph distributive justice is covered.

The literature speaks of distributive justice when an individual perceives the amount of resources which he or she receives to be equal to the resources the individual provides (Greenberg J. , 1987). Thus, when one individual gives resources or puts effort in a matter he/she experiences distributive justice when they perceive the amount of resources or effort they get back is sufficient. When people get the feeling that the other party has already given their part of the exchange, the need to give something back refers to the need for distributive justice, or the need to reciprocate. In an online environment the resources that are provided by consumers are mostly personal information, such as e-mail addresses, surfing behaviour(cookies) or phone numbers. In return consumers expect to receive proportional benefits such as more convenient websites or better advertisements. Wirtz and Lwin (2009) defined distributive justice in an online environment as when the consumers' input (personal information) is proportional to the online benefits, which are provided by the firms (customized website) (Wirtz & Lwin, 2009). The most difficult part of the exchanges is letting consumers know what they already received, to make them feel the need to give something back. This is necessary because consumers may not realise that they receive benefits, because they do not know what the benefits are. Therefore, it is important for the free online businesses to communicate with their users to convince the users that they are part of a social exchange. If they succeed, the fact that people feel the need to reciprocate can be exploited.

2.1.6 Attitude towards advertisement

Whilst OBA is a relatively new form of advertisement consumers likely are highly familiar with advertising in general, because they are exposed to it daily. Therefore, the possibility that consumers have developed a stable and consistent attitude towards general advertising is high (Bauer, Reichardt, Barnes, & Neumann, 2005).

Attitude towards advertising can easily be confused with another construct which is attitude towards the ad. This section focuses on the first construct, but to give a more thorough inside on the constructs both are explained.

Attitude towards the ad is defined as: *"pre-disposition to respond in a favourable or unfavourable manner to a particular advertising stimulus during a particular exposure occasion"* (Lutz, 1985). A consumer's attitude towards an advertisement has influence on the advertisement's effectiveness, brand attitudes and purchase intentions (MacKenzie & Lutz, 1989). When a consumer enjoyed an advertisement he/she is likely to hold a favourable attitude toward the brand and vice versa.

Attitude towards advertising is defined as: *"a learned predisposition to respond in a consistently favourable or unfavourable manner to advertising in general"* (Lutz, 1985). Attitude towards advertising also influences the attitude towards specific ads, which influences the ad's effectiveness (Lutz, 1985). Therefore, the attitude towards advertising in general is helpful in market research, because it can be used for every ad.

Research on attitude towards advertisement show mixed findings. Research found that consumers think that advertisements are intrusive and annoying. Moreover, research shows a generally negative attitude towards advertising (Alwitt & Prabhaker, 1994; Zanot, 1984). However, other research by Shavitt, Lowrey & Heafner (1998) found that consumers have a positive attitude towards advertising. Overall the attitude towards advertising is different for each individual. Consumers find advertising informative, generally useful in guiding their decision making and they enjoy certain ads. Even though consumers do not generally trust advertising, they feel more confident about advertising when the ads are focused on their actual purchase decisions. This positive attitude is mostly shared among younger consumers, males, persons with lower education or income and non-whites than others do (Shavitt, Lowrey, & Heafner, 1998).

So consumers tend to appreciate advertising more when it helps them to make a choice when buying a product, which is consistent with the problem that advertisement should be relevant to individuals to make a difference as cited by Ducoffe (1995) : *“The vast majority of advertising exposures reach individuals when they are not shopping for the product or service being advertised, so most messages are simply not relevant to consumer concerns at the time of exposure (Ducoffe, 1995)”*. Marketers are improving the relevance of ads for years and they try to make the ads as relevant as possible with OBA.

2.2 Dependent variable

In this paragraph the dependent variable will be discussed. The key dependent variable in this thesis is the likelihood of accepting online behavioural targeting. Whilst OBA is a fairly new advertising method, a decent amount of research is done on the effectiveness of OBA (Boerman, Kruikemeier, & Borgesius, 2017; Tucker, 2014; Aguirre, Mahr, Grewal, Ruyter, & Wetzels, 2015; Bleier & Eisenbeiss, 2015; Lambrecht & Tucker, 2013; Schumann, Wangenheim, & Groene, 2014). In contrast to the literature on the effectiveness of OBA, little research has been done about the acceptance of OBA. This section starts with explaining briefly the effectiveness of OBA, followed by the current literature about OBA acceptance.

The click-through-rate (CTR) is widely used by advertisers to measure the effectiveness of ads. Advertisers can see what percentage of the people who were exposed to the ad also clicked on it. Research done by Tucker (2014) concluded that Facebook ads that target the interest of consumers have a higher CTR than ads that target background characteristics. Also, the research of Aguirre et al. (2015) stated that moderately personalized Facebook ads result in a higher CTR than ads which are non-personalized; but when highly personalized ads are used this has a negative effect on the CTR. Furthermore, Bleier and Eisenbeiss (2015) found that highly personalized banner ads which included products consumers put in their virtual shopping cart caused an increase in CTR, compared to banner ads with products a consumer searched for while they were online shopping. Therefore, OBA can lead to higher CTR, but using OBA is only profitable up to a certain extent, which is situation dependent.

Data collection also plays a part in the CTR of OBA ads. When sites overtly inform consumers about the collection of their data which they use for personalized ads, OBA will increase CTR of these companies. In contrast, when companies covertly collect data of consumers the CTR of OBA will decrease (Aguirre, Mahr, Grewal, Ruyter, & Wetzels, 2015). When consumers are

unaware that data is collected they feel more vulnerable when they see personalized ads, which also decreases their intention to click on the ad (Aguirre, Mahr, Grewal, Ruyter, & Wetzels, 2015). Therefore, it is important that companies overtly collect the data of consumers.

Besides investigating the effectiveness of OBA, research was also done involving the factors which can explain avoidance and acceptance of OBA. Consumers who are sceptic about ads will avoid ads more, ad scepticism is mainly based on privacy concerns and ad irritation (Baek & Morimoto, 2012). Transparency about the reason why companies collect data is an important factor in the acceptance of OBA. The research of Schumann, Wanhenheim and Groene (2014) found that using a reciprocity appeal was more effective than using a relevance appeal. However, that research was conducted in Germany. This thesis will test if this is also the case in the Netherlands.

2.3 Independent variables

In this section the independent variables are discussed followed by the hypothesis and the suspected main and moderate effects are summarized in the conceptual framework of this study.

This thesis features four independent variables, three of these independent variables are moderators. The main independent variable is the message used to convince consumers to allow the site to track them and enabling them to provide personalized ads to these individual consumers.

2.3.1 Persuading message

There are three different messages; (i) a neutral message, (ii) a relevance message and (iii) a reciprocity message. The relevance and the reciprocity message are compared on effectiveness in convincing consumers to accept OBA, while the neutral message is used as a control condition for the two other messages. Both the relevance argument and the reciprocity argument are distinct approaches, designed to motivate consumers to accept targeted advertisement. In theory both methods can support this goal, but research on cooperative behaviour suggests that the reciprocity appeal may be the more effective of the two appeals. A website provides free content, but consumers tend to forget that nothing is free. There are a lot of free websites, but all these websites need to make revenue or get

donations to finance their service. Most of these free websites use ads to collect their revenue, that is a well-known fact, so consumers pay for the service by being exposed to ads. Firms can use different kind of appeals to convince consumers to accept their cookies. The first one which is tested in this thesis is based upon reciprocity. The reciprocity approach is based upon the feeling of indebtedness of the consumers (Greenberg M. S., 1980), where websites inform consumers that they give free content but need to show them ads to finance this content. In order to get the best results from this ads the website needs the personal information of these consumers to tailor them personalized ads, which are the most effective (Bleier & Eisenbeiss, 2015). When consumers notice that the other party already gave something, i.e. the free content of a website, they should be more likely to give personal data. As seen in paragraph 2.1.3 there are multiple benefits in the reciprocity argument. This results in the following hypothesis:

H1a: Using a reciprocity appeal to convince consumers results in a higher likelihood of accepting OBA than when a neutral appeal is used.

Despite the fact that theory about a reciprocity appeal to convince consumers of accepting cookies is positive, the industry standard still is a relevance appeal. In theory this approach should also work, the relevance approach is based upon the social exchange theory (Thibaut & Kelley, 1959), where people evaluate the benefits they receive to costs they have to give. Websites can make use of relevance messages which promises that if they can collect online data of consumers they can tailor more personalized ads. The benefits are not only free content, but also more relevant advertisements and the costs are their personal data. Which should be beneficial for consumers, because they would see more advertisements on their preferred interests whilst enjoying the free content of the website. Therefore, the following hypothesis will be tested:

H1b: Using a relevance appeal to convince consumers results in a higher likelihood of accepting OBA than when a neutral appeal is used.

2.3.2 Privacy concerns

Privacy concerns play a big role in the online advertisement market and the privacy concerns of Dutch consumers are getting higher every year. In a study carried out by Ruigrok NetPanel a comparison of privacy concerns is made between Dutch consumers in 2012 and in 2016. The online privacy concerns of the older generations are increasing slightly from 51% to 53% for

consumers in the age range of 36-55, and from 53% to 58% of the consumers in the age range of 56-71 (Ruigrok, 2017). Those two age ranges tend to have higher rates of online privacy concerns, because older generation already have had some bad experiences with online privacy or do not blindly trust advertisers by their good intentions, which makes them suspicious. Besides the small increase in the higher age ranges, there is a more problematic trend. The online privacy concerns of the younger generations are increasing. In 2012 26% of the consumers between 14-20 had privacy concerns, whereas in 2016 this has grown to 42% (Ruigrok, 2017), which is a big increase in only four years. An increase of privacy concerns was observed also in the age group of 21-35: while in 2012 38% of the consumers in this group had online privacy concerns this number has increased to 55% in 2016 (Ruigrok, 2017). This increase could be a result of the knowledge which all these groups have of the online world. More and more Dutch consumers are aware of the fact that companies use cookies to track their online behaviour. That may scare them because they get the feeling that everything they do is followed and they do not want this to happen. Therefore, a higher level of privacy concerns may negatively affect the effect of the different appeals on the likelihood of accepting OBA. The reciprocity appeal makes use of the need to reciprocate, but the effectiveness of this effect may be negatively influenced when privacy concerns of the consumer are high. Thus, the following hypothesis will be tested to see if privacy concerns influence the effect of a reciprocity appeal:

H2a: A higher level of privacy concerns negatively influences the effect of a reciprocity appeal on the likelihood of accepting OBA.

The relevance approach can be even more influenced by privacy concerns, because people with high privacy concerns do not like the fact that they are monitored (Ruigrok, 2017). The relevance appeal explicitly mentions that the data is used to tailor more personalized ads, thus telling consumers that they “monitor” the online behavior of the consumers. Which could lead to a negative effect of privacy concerns on the effectiveness of a relevance appeal. This negative effect could occur because consumers who have a higher level privacy concerns do not like the fact that their personal data is used, this results in the following hypothesis:

H2b: A higher level of privacy concerns negatively influences the effect of a relevance appeal on the likelihood of accepting OBA.

2.3.3 Need for distributive justice

One of the factors that drives the reciprocity argument is distributive justice. Distributive justice is met when an individual receives the same amount he or she provides (Greenberg J. , 1987). For free websites the users receive free content and give personal data. If consumers know why the website needs their personal data, the consumers may feel the need to give something back. When website refers to their free content which can only be supported by ads this should evoke a higher need for distributive justice in comparison with a website which does not mention this. Moreover, Dutch consumers know why cookies are collected by websites, but they may not think about the consequences it could have when most of the consumers would not accept these cookies. The higher the feeling of distributive justice gets, the more consumers tend to give something back, in this case personal data. Therefore, the next hypothesis is:

H3: The effect of a reciprocity appeal on likelihood of accepting OBA is positively influenced when need for distributive justice is higher.

2.3.4 Attitude towards advertising

Another construct that could be of influence on the likelihood of accepting OBA and the effect of the different appeals is attitude towards advertising. This attitude is formed by the consumers based on the previous encounters with advertising. Everyone has encountered ads, therefore every consumers has an attitude towards advertising (Bauer, Reichardt, Barnes, & Neumann, 2005). People who like ads in general would be more likely to accept cookies, because they do not mind the ads. But there are also consumers with a negative attitude towards advertising, this could be caused by over-personalization of ads, which can lead to negative attitudes towards advertising, because consumers tend to find the ads intrusive and could get a feeling of reactance (Bleier & Eisenbeiss, 2015). When consumers have a negative attitude towards advertising they should be less likely to accept cookies and thus OBA. The next hypothesis will be tested to see whether the effect of attitude towards advertising affects the likelihood of accepting OBA:

H4a: A more positive attitude towards advertising results in a higher likelihood of accepting OBA.

Besides the direct effect, attitude towards advertising could possibly affect the effect of the different appeals. As earlier discussed, the reciprocity appeal is designed to evoke the feeling of indebtedness (Schumann, Wangenheim, & Groene, 2014). Consumers with a negative attitude towards advertising do not like the ads they see online, which makes them less likely to give permission to use their personal data as payment method. In contrast to people with a positive attitude towards advertising, which do not mind the ads they see online (Shavitt, Lowrey, & Heafner, 1998) and thus do not see the problem with giving personal information when this results in better ads. Therefore, the following hypothesis is formulated:

H4b: The likelihood of accepting OBA increases when a more positive attitude towards advertising is combined with the reciprocity appeal.

The effect of a relevance appeal on the likelihood of accepting OBA could also be influenced by the attitude towards advertising. The relevance argument is based on the social exchange theory (Thibaut & Kelley, 1959), where consumers evaluate the benefits they receive if they give personal information to the website. When consumers have a negative attitude towards advertising they could be less triggered by the benefits they receive from the exchange and therefore a relevance appeal could not be effective for this group. Where consumers with a positive attitude could be convinced easier when they are approached with a relevance appeal because they might perceive the benefits of the social exchange greater than the costs. Where they give some personal information to receive more relevant ads. The more relevant ads are also contributing to a more positive attitude towards advertising, because perceived ad informativeness has a strong effect on the attitude towards advertising (Schlosser, Shavitt, & Kanfer, 1999). Therefore, relevant ads contribute to a more positive attitude towards advertising. Consumers with a more positive attitude towards advertising should be willing to give personal data for relevant ads because they know the benefits they perceive of relevant ads. It is therefore hypothesized that:

H4c: The likelihood of accepting OBA increases when a more positive attitude towards advertising is combined with the relevance appeal.

2.4 Conceptual framework

Figure 7, which is found on the next page, gives an overview of the different variables and their suspected effects. The hypotheses are also summarized in Table 1, to provide a overview of the hypotheses, it is also found on the next page.

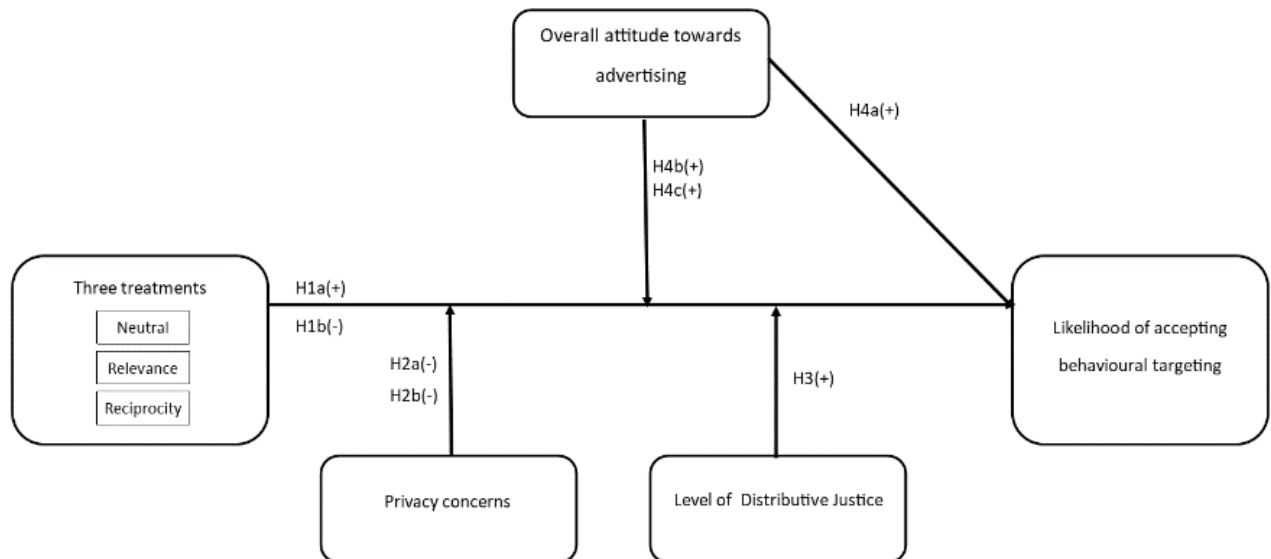


figure 3 - Conceptual framework

Table 1 - Hypotheses

#	Hypothesis
H1a.	Using a reciprocity appeal to convince consumers results in a higher likelihood of accepting OBA
H1b.	Using a relevance appeal to convince consumers results in a lower likelihood of accepting OBA
H2a.	A higher level of privacy concerns negatively influences the effect of a reciprocity appeal on the likelihood of accepting OBA.
H2b.	A higher level of privacy concerns negatively influences the effect of a relevance appeal on the likelihood of accepting OBA.
H3.	The effect of a reciprocity appeal on likelihood of accepting OBA is positively influenced when the level of need for distributive justice is higher.
H4a	A more positive attitude towards advertising results in a higher likelihood of accepting OBA.
H4b	The likelihood of accepting OBA increases when a more positive attitude towards advertising is combined with the reciprocity appeal.
H4c	The likelihood of accepting OBA increases when a more negative attitude towards advertising is combined with the relevance appeal.

3. Methodology

This chapter describes the experimental setup that is used to test the hypotheses in this thesis. First, the methodological approach and the setting of the online scenario-based experiment are discussed. This is followed by data collection and an overview of the manipulations which are applied. Thereafter, the research variables and the control variables are described. Lastly, the experimental setup and sample requirements are discussed.

3.1 Experimental design

The research objective of this thesis is to examine which message can most effectively alter the thoughts of consumers, so they are willing to accept the cookies of a website which enables advertisers to tailor ads. To test this correctly, multiple treatments are deployed in a scenario-based experiment that includes a post-experiment survey. This creates a situation where participants are exposed to different treatments and then will be asked about their thoughts on the subject. An experiment design is useful because the inferred relationship can be tested in a controlled environment where the different treatments can be shown to the participants deliberately. The experiment features a ‘between-subject’ design. The ‘within-subject’ design is not chosen in this thesis because there may not be any learning effects involved in the survey. If participants were to answer questions about all the treatments they could alter their perspective against the treatments they first saw, which could lead to bias within the research.

3.2 Setting of scenario-based online experiment

To test the hypotheses a between-subject experimental design is used. The participants will be randomly assigned to one of the three treatments. The experiment begins with instructions about the survey and the respondents are asked to imagine that they are browsing a news website. During this “browsing”, a screenshot of a news site and one of the different treatments is shown. After they have seen the screenshots, the participants are exposed to the different treatments which pop-up on the site as a flash layer that overlaps the news site. Figure 4 gives an example of the website and message. After the participants have read the message, they are asked to click “*continue*” to start the survey.



figure 4 - Website and message

3.3 Pretest

A necessary pretest on the different messages is needed to be sure the right messages are being used. The comprehensibility of the messages is tested and whether the messages provoke the initial thoughts for each message. To test this a survey is used. The experiment begins with an introduction where the that the participants are asked to imagine that they are browsing the web and want to check the news on a news website, but when they try to go to the site a message pops-up. The participants will be randomly assigned to one of the three treatments. After the participant have read the message he/she will be forwarded to the survey.

3.3.1 Comprehensibility

In order to process the given information of a message it must be comprehensible. If the information is processed well this might result in improved cognitive response, such as information recall (Weert, et al., 2011). It is important to know if the different messages which

are used in the experiment are all comprehensible, because if participants do not understand the message the results of the experiment are biased. To test whether the messages are comprehensible the participants first read the message. After they have read the message they will answer a 7 point semantic differential scale question which consist of six items based on Van Meurs, Korzilius and Hermans(2004), and featured the items: (i) difficult/easy, (ii) simple/complex, (iii) unclear/clear, (iv) poorly organized/well organized, (v) logical/illogical and (vi) concise/lengthy (Meurs, Korzilius, & Hermans, 2004).

3.3.2 Relevance vs. reciprocity

Besides the comprehensibility of the messages it is also important to test whether the different treatments fulfil their purpose. Thus, there is a test whether the relevance argument scores higher on a relevance matter than the reciprocity argument does and the reciprocity argument scores higher on a reciprocity matter in comparison with the relevance argument. The neutral argument is also tested by comparing the scores to both the reciprocity as the relevance argument. To test these two constructs used in the research of Schumann, Wangenheim & Groene (2014) are used. To test whether the reciprocity argument evokes higher need for distributive justice a 7-point Likert-scale composed of 3 items is used and to test the score on relevance 7-point Likert-scale composed of 3 items on relevance anticipation is used. In table 2 an overview of all the constructs and measures which are used in the pretest are given. Appendix B features the whole survey used for the pretest.

Table 2 - Constructs and measures used in pretest

Construct	Source	Description	Items	Variable type
Comprehensibility	(Meurs, Korzilius, & Hermans, 2004)	The scale and questions are used to measure usefulness of the ad. A 7-point semantic differential scale was used	1. difficult/easy, 2. simple/complex 3. unclear/clear, 4. Poorly organized /well organized 5. logical/illogical 6.concise/lengthy	Interval
Need for distributive justice (Independent)	(Wirtz & Lwin, 2009)	The scale and questions are used to measure usefulness of the ad. A 7-point Likert scale was used (1= strongly	1. It is fair to reward the website for providing its content to me. 2. It is okay that the website asks	Interval

		disagree, 7= strongly agree)	for a favour in exchange for free content. 3. Providing the website a benefit in return for its content is fair.	
Relevance anticipation	(Laczniak & Muehling, 1993)	The scale and questions are used to measure usefulness of the ad. A 7-point Likert scale was used (1= strongly disagree, 7= strongly agree)	1. I will see online ads that are relevant to me. 2. I will receive useful information through online ads. 3. Online advertisements will be interesting to me. 4. Online advertisements will be worth paying attention to.	Interval

3.3.3 Pretest results

Before the analysis of the results of the pretest are performed the collected data is explored. The survey was crafted in Qualtrics and was online for the period of 5 days, 77 respondents participated the survey, 17 of those 77 were excluded from the analysis because the respondents did not complete the whole survey. Therefore, 60 complete surveys were used for the analysis, 20 respondents per treatment. The sample size is mixed by gender (55% male and 45% female), with a relatively big group in the age bracket 15-25 (56.7%), followed by 26-35 (33.4%) and 36 and above (10%).

To test whether the messages were comprehensible a 7-point semantic differential scale including 6 items was used (Meurs, Korzilius, & Hermans, 2004), We used the Cronbach's Alpha test to test whether the combined variable is reliable. The Cronbach's Alpha is a traditional measure to study the reliability of a construct, it measures the internal consistency of the different items, so the extent to which all the items of a construct measure the same attribute. (Cronbach, 1951). A Cronbach's Alpha of 0.7 or above indicates that the different items can be combined in to one reliable variable (Field, 2009). The items yielded a Cronbach's Alpha of 0.862 and thus above the 0.7 threshold. In figure 8 the means of the perceived comprehensibility of the messages is given. The items were measured on a 1-7 scale where

e.g. one indicates that the message was unclear and seven that the message was clear. The mean scores of the comprehensibility test of the different treatments are calculated and given in figure 5. The neutral messages was used as a baseline and a one-way ANOVA was used to test if the other messages had a significantly different mean, the one-way ANOVA concluded that there was no statistically significant difference ($F(2,57) = .364, p = .696$). This stated that the different treatments were comprehensible, because the mean comprehensibility of the neutral treatment was 5.18 which is positive on a Likert-scale of 1 to 7.

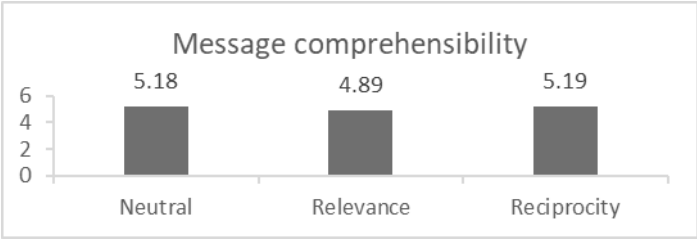


figure 5 – Comprehensibility of the different messages

To indicate whether the relevance message indeed evoked a higher level of ad relevance we used a 7-point Likert-scale consisting of 4 items conducted from Laczniak and Meuhling (1993). We used this measure to test whether the participants got the feeling that after reading the messages that they would encounter more relevant ads. The 4 items were combined in one variable, we made use of the Cronbach’s Alpha test to see if combined scale of 4 items was reliable. The Cronbach’s Alpha of this scale was 0.836 and thus satisfied the required level of 0.7. In figure 9 an overview of the mean scores is given. To test if the relevance treatment indeed evoked a higher level of ad relevance a one-way ANOVA was used to test for significantly different means, no significant difference in the level of ad relevance were found ANOVA($F(2,57) = .638, p = .532$). This indicates that the relevance treatment did not evoke a higher ad relevance score than the neutral or reciprocity treatment, which concludes that the relevance messages should be adjusted.

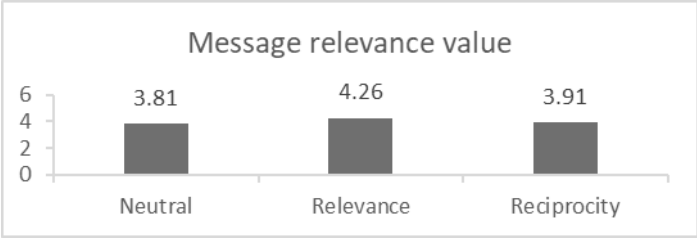


figure 6 – Level of perceived message ad relevance score (no significant differences)

The last manipulation we checked was if the reciprocity messages indeed evoked a higher need to reciprocate, we used the a 7-point Likert-scale from Wirtz and Lwin (2009) which consists of three items. This variable measures the need for distributive justice, which we use to see if the reciprocity treatment indeed evokes a higher need to reciprocate. The items of this variable yielded a Cronbach's Alpha of 0.821, so above the 0.7 threshold which indicates that the combined scale is reliable. We predicted that the third treatment evoked a higher need for distributive justice compared to the other two. In figure 7 the mean scores of the three treatments on the level of reciprocity are given, where the neutral message has the lowest overall mean (4.33), followed by the relevance message (4.4) and the overall mean score of 5.4. We conducted an ANOVA test to test whether there was a significant difference in the means. The Levene's test was used to test the Homogeneity of variances which came out non-significant($p=.215$), so we could analyse the results of the ANOVA. There was a significant difference between groups as determined by one-way ANOVA($F(2,57) = 4.600$ $p = .014$), so a post-hoc test was used to test which means were significantly different from each other. The Tukey's test was used, because we had equal sample sizes and the population variances are equal, two out of the three means were significantly different, which were the Neutral \rightarrow Reciprocity($p=.024$) and Relevance \rightarrow Reciprocity($p=.037$), which indicates that treatment three(reciprocity), indeed evokes a higher need for distributive justice. Therefore, this message does have the expected effect on the respondents.

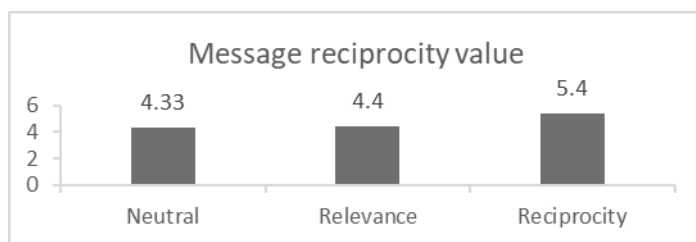


figure 7 - Level of perceived message relevance value

Based on the results of the pretest we made a few adjustments to the different treatments. The neutral message is adjusted to make it more neutral, two sentences are removed to make the neutral message as minimalistic as possible. Because we needed to keep the messages as short as possible we did not add text to the relevance message, we thought that the low ad relevance score could be caused by the lower comprehensibility score, so we adjusted the message to try to make it easier to read. The changes we made were based on common sense and due the lack of time was not tested again. Table 3 gives an overview of the changes made,

where red indicates a removal of text and blue indicates a modification of the text. The sentence following in black is the replacement text.

Neutral message	Relevance message	Reciprocity message
<p>We are happy that you are visiting our website. Here, we offer the latest news and articles to you. Besides, we display advertisements to you.</p> <p>We would like to give our advertisers the possibility to reach their target group. Those visitors who read a lot about travel should see more advertisements on vacation offerings and fewer advertisements on other topics.</p> <p>To do so, we evaluate your surfing behaviour based on unidentifiable information. [How does this work?] We assure you that we do not draw any conclusions regarding your identity. [Privacy Policy]</p>	<p>We are happy that you are visiting our website. Here, we offer the latest news and articles to you. Besides, we display advertisements to you.</p> <p>We would like you to view advertisements you are interested in. For example, if you read a lot about travel, you will see more advertisements on vacations offerings and fewer advertisements on other topics. So, if you read a lot about travel, the advertisements you see will feature mostly vacation offerings.</p> <p>To do so, we evaluate your surfing behaviour based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can see, edit or delete the information stored on you at any time at My Information.</p>	<p>We are happy to offer you the latest news and articles for free. That is possible because we show your advertisements in exchange. Only this way can we keep our offering free of charge.</p> <p>We would like to give our advertisers the possibility to reach their target group. Those visitors who read a lot about travel should see more advertisements on vacation offerings and fewer advertisements on other topics. So, if you read a lot about travel, our advertisers will show more ads featuring vacation offerings.</p> <p>To do so, we evaluate your surfing behaviour based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can see, edit or delete the information stored on you at any time at My Information.</p>

Table 3 - Treatment Adjustments (Schumann, Wangenheim, & Groene, 2014)

3.4 Research variables

In this section the dependent and independent variables are described and discussed.

Likelihood of accepting OBA

The focus of this study is to understand how different appeals to users of free websites can alter their decision of accepting OBA instead of rejecting it. This construct is measured using a construct of Schumann, Wangenheim & Groene (2014), where three items are used to measure the likelihood of accepting OBA for free web services. The three items are illustrated in table 3.

Persuading message

Three different messages were used to test whether different kind of appeals could lead to a higher likelihood of accepting OBA, table 4 gives an overview of the three different messages. The messages based on messages from Schumann, Wangenheim & Groene (2014),

who used these messages for their research about accepting OBA by free web service users in Germany. All the treatments start with a fixed text and end with a fixed end, respectively “Dear visitor” and “Thank you for your time, Daag.nl.”.

Table 4 - Treatment Messages (Schumann, Wangenheim, & Groene, 2014)

Treatment 1 Neutral message	Treatment 2 Relevance message	Treatment 3 Reciprocity message
<p>We are happy that you are visiting our website. Here, we offer the latest news and articles to you. Besides, we display advertisements to you.</p> <p>We would like to give our advertisers the possibility to reach their target group.</p> <p>To do so, we evaluate your surfing behaviour based on unidentifiable information. [How does this work?] [Privacy Policy].</p>	<p>We are happy that you are visiting our website. Here, we offer the latest news and articles to you. Besides, we display advertisements to you.</p> <p>We would like you to view advertisements you are interested in. So, if you read a lot about travel, the advertisements you see will feature mostly vacation offerings.</p> <p>To do so, we evaluate your surfing behaviour based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can see, edit or delete the information stored on you at any time at My Information.</p>	<p>We are happy to offer you the latest news and articles for free. That is possible because we show you advertisements in exchange. Only this way can we keep our offering free of charge.</p> <p>We would like to give our advertisers the possibility to reach their target group. So, if you read a lot about travel, our advertisers will show more ads featuring vacation offerings.</p> <p>To do so, we evaluate your surfing behaviour based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can see, edit or delete the information stored on you at any time at My Information.</p>

Privacy concerns need for distributive justice and attitude towards advertising

Privacy concerns, the need for distributive justice and attitude towards advertising are the moderating independent variables in this paper. Consumers’ choice of accepting OBA can be influenced by these three constructs. First, privacy concerns can affect the use of different messages to persuade consumers to accept OBA, because consumers with high privacy concerns may see OBA as an invasion of their privacy. The privacy concerns are measured on a 7-point Likert scale with four items (Sheng, Nah, & Siau, 2008), which are used to compute a mean score of privacy concerns for every respondent. Second, the need for distributive justice can be different per consumer, so people who feel a higher need for distributive justice should be easier to convince when using a reciprocity appeal. This could have a positive or negative effect on the reciprocity appeal. The need for distributive justice is also measured with a 7-point Likert scale and the three items of this scale (Wirtz & Lwin, 2009) are used to

compute a mean score of the need for distributive justice. Third, the overall attitude towards advertising can affect the decision of accepting OBA, this attitude is formed by previous encounters with ads. This attitude could moderate the effect of the different treatments which are used to convince the consumers, as well on accepting OBA overall. As for privacy concerns and need for distributive justice a 7-point Likert scale is used to measure the attitude towards advertising (Pollay & Mittal, 1993), three items are used to compute a mean score of attitude towards advertising per respondent. Table 3 gives an overview of all the constructs and the items which they are measured with. All variables except for the different treatments are 7-point Likert scales with multiple items each. The variables are already used in prior research on the effectiveness of different appeals on the acceptance of OBA, therefore the scales are remained the same as in this prior research done by Schumann, Wangenheim and Groene.

Table 5 - Independent- and dependent variable

Construct	Source	Description	Items	Variable type
Likelihood of accepting behavioural retargeting (dependent)	(Schumann, Wangenheim, & Groene, 2014)	The scale and questions are used to measure the likelihood of installing an ad-blocker. A 7-point Likert scale was used (1= strongly disagree, 7= strongly agree)	1. I would probably allow the website to evaluate my surfing behaviour. 2. It is likely that I would consent to an analysis of my surfing behaviour. 3. I would be willing to agree to an evaluation of my surfing behaviour.	Interval
Persuading message (independent)	(Schumann, Wangenheim, & Groene, 2014)	Indicator of which appeal is shown to participant	1. Neutral 2. Relevance 3. Reciprocity	Nominal
Privacy concerns (independent)	(Sheng, Nah, & Siau, 2008)	The scale and questions are used to measure level of privacy concerns. A 7-point Likert scale was used (1= strongly disagree, 7= strongly agree)	1. It bothers me that the firm can track information about me. 2. I am concerned that the firm has too much information about me. 3. It bothers me that the firm can	Interval

			access information about me. 4. I am concerned that my information could be used in ways I could not foresee	
Need for distributive justice (Independent)	(Wirtz & Lwin, 2009)	The scale and questions are used to measure the need for distributive justice. A 7-point Likert scale was used (1= strongly disagree, 7= strongly agree)	1. It is fair to reward the website for providing its content to me. 2. It is okay that the website asks for a favour in exchange for free content. 3. Providing the website a benefit in return for its content is fair.	Interval
Attitude towards advertising (Independent)	(Pollay & Mittal, 1993)	The scale and questions are used to measure the attitude towards advertising. A 7-point Likert scale was used (1= strongly disagree, 7= strongly agree)	1. Overall, I consider advertising a good thing. 2. My general opinion of advertising is favourable. 3. Overall, I like advertising.	Interval

3.5 Regression model

In order to test the effect of the independent variables on the dependent variable ordinary least squares regression (OLS) is the preferred analysis. OLS regression is an analysis method which gives an indication which independent variables predict the dependent variables and how big this effect of the independent variables are. The regression equation of the model is as followed:

$$\begin{aligned}
 Y = & b_0 + b_1Rec_1 + b_2Rel_2 + b_3Priv_3 + b_4Dist_4 + b_5Att_5 + b_6(Rec_1 \times Priv_3) \\
 & + b_7(Rec_1 \times Distr_4) + b_8(Rec_1 \times Att_5) + b_9(Rel_2 \times Priv_3) \\
 & + b_{10}(Rel_2 \times Att_5) + \varepsilon
 \end{aligned}$$

3.5 Control variables

In this section, the control variables which are used in this paper are discussed. The control variables are included in this paper to assess the causality and the relationship between the proposed relationships. The control variables are grouped in to three categories; Demographics, Experimental controls and Online background and behaviour. The three groups will be discussed below, a complete overview of all the control variables is given in appendix C.

3.5.1 Demographics

Demographics can be an influential factor for acceptance of OBA and privacy concerns, because older people tend have higher online privacy concerns (Ruigrok, 2017). Research done by Smith, Dinev and Xu (2011) also found that demographics are significant related to privacy concerns (Smith, Dinev, & Xu, 2011). To control for the demographics of the respondents questions about age, education and gender are included in the survey.

3.5.2 Experimental controls

To test whether the hypothetical scenario which is used in the survey is realistic, control variables are added. The respondents were asked a question about the realism of the experiment. In addition, a question regarding the interest in the news website is asked, to test if the respondents studied the news website as if it was a real website.

3.5.3 Online behaviour and background

Consumers have different perspectives and background on online news sites. These variables control for those differences. Questions about the use of internet and free news website are asked. The respondents are also asked a question regarding the relevance anticipation of the message, to control for the fact that the reciprocity message is not affecting every consumer on the same way.

3.6 Experimental setup and sample requirements

The survey flow is illustrated in figure 8, the survey lasted approximately 4 minutes. The visuals which are used in the survey were created using PowerPoint, the news website is composed of multiple Dutch news websites like Telegraaf.nl and Nu.nl. When making the “website” we made sure that associations with real life companies was minimized. A complete overview of the survey is given in appendix D. As shown in Figure 8 on the next page the respondents who

start the survey and were not excluded in the beginning are randomly distributed to three treatments.

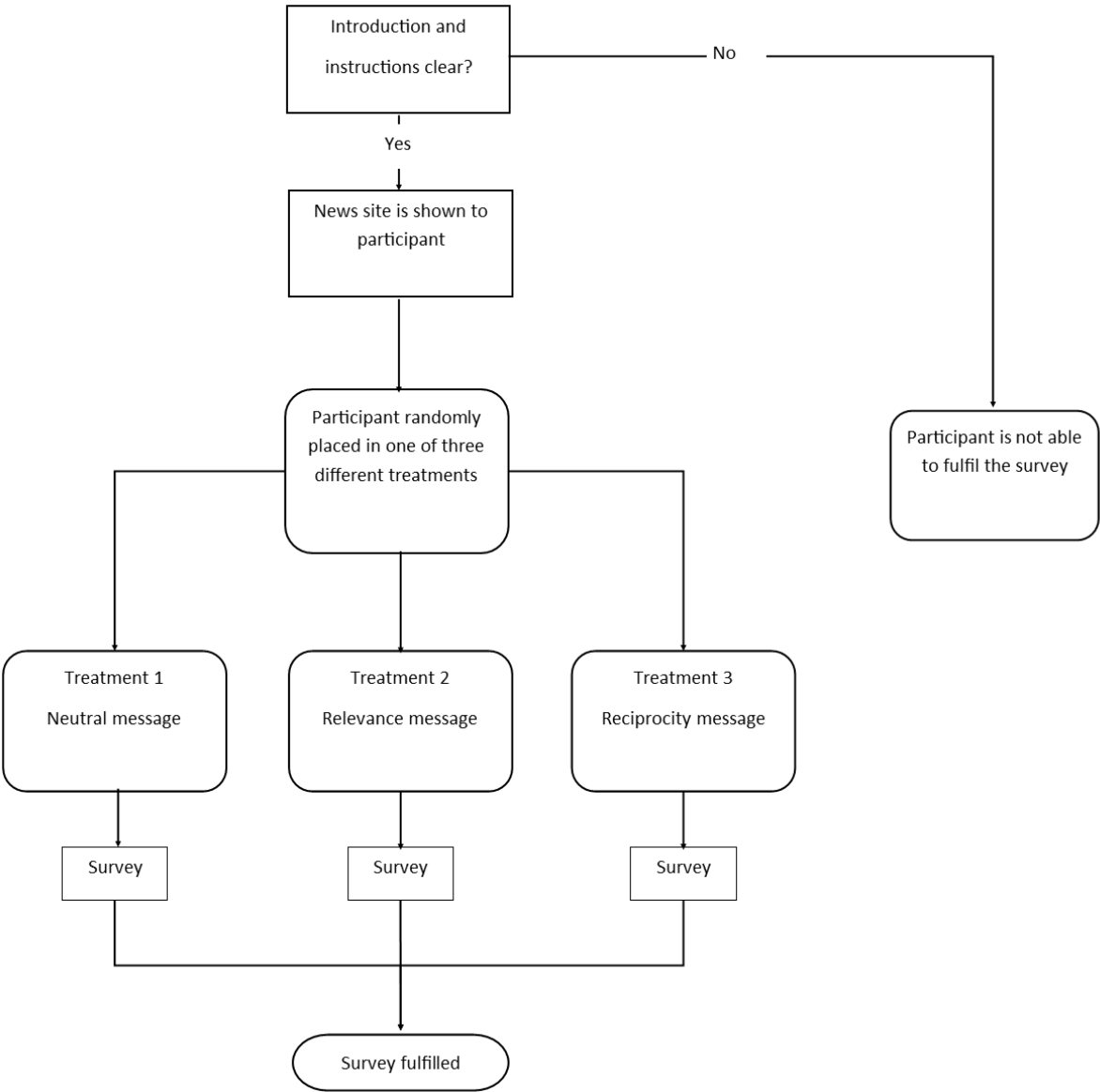


figure 8 - Survey flow

4. Results and analysis

In this section, the results of the survey are given, followed by the analysis of the data. At first the descriptive statistics of the data are discussed, followed by reliability checks, and the validity of this research is examined. Thereafter, we check the assumptions to run the regression analysis, followed by testing the hypotheses. At last, an analysis of the data is given to determine if some main effects which were not included in the regression model affect the regression.

4.1 Descriptive statistics

Before the collected data is analysed, the collected data is explored. In total 424 respondents started the main survey, 79 respondents were excluded from the analysis because they did not finish the survey. Another five respondents were excluded from the main analysis because they finished the survey in under two minutes, most of the respondents needed four to five minutes to complete the survey, so we chose to exclude cases that finished the survey under 2 minutes. Therefore, the sample size which is used for the analysis consists of 340 respondents. This sample size was mixed by gender (56.9% men and 43.1% woman), with 8.5% in the age range of 15-20 years, a relatively large group in the age bracket of 21-25(48.0%), 19.9% in age range 26-30, 0.9% for the age bracket of 36-40, in the age range of 41-45(2.4%), 46-50(1.5%), 51-55(3.9%) and 12.1% of the respondents were 55 years old or older. The educational level of the sample size is relatively high with 57.8% of the respondents having a bachelor's degree, 20.4% have a master's degree, 2.4% have a doctorate degree, 10.5% have finished intermediate vocational education and 7.8% finished their formal education with secondary education. Some respondents did not answer one or more of the questions regarding their demographic characteristics but were still included in the main analysis. For a complete overview of the demographic characteristics, please see Appendix E1.

4.2 Reliability & Validity

In this chapter the independent and dependent variables are explored, the reliability of the different variables is checked and the validity of this research is discussed. Tables 6 provide an overview of the means, standard deviations, correlations of the variables and a test for reliability.

Table 6 - Descriptive, correlation and reliability

	M	Std.	(1)	(2)	(3)	(4)	(5)	(6)
(1) Reciprocity appeal	.33	.47	1					
(2) Relevance appeal	.33	.47	-.491**	1				
(3) Distributive justice	4	1.4	-.122*	-.103	1			
(4) Privacy concerns	5.1	1.4	.000	.050	-.339**	1		
(5) Attitude towards advertising	3.9	1.3	-.060	.066	.277**	-.286**	1	
(6) Likelihood of accepting OBA	4	1.8	.039	-.043	.406**	-.459**	.338**	1
Cronbach's Alpha			n/a	n/a	.79	.89	.88	.93
Variance inflation factor			1.357	1.352	4.191	3.610	3.702	n/a

N= 330 | ^ < p 0.1, * < p 0.5, ** < p 0.01, *** < p 0.001

The means show a couple of findings, the mean of the two different treatments (both .33), indicates that the randomization of the different treatments succeeded. The total of the two means equals .66, so the other 33% of the respondents saw the neutral treatment. The second finding is that the mean of privacy concerns is the highest with 5.1 which indicates that privacy concerns were triggered the most out of all variables. The last finding is that distributive justice, attitude towards advertising and likelihood of accepting OBA all are equal or almost equal to 4, which is the neutral in a 7-point Likert-scale.

The correlations surprisingly show that the different treatments are not correlated with most of the variables (only with each other and with distributive justice). The other variables are mostly correlated, with the highest correlation between the different treatments. The other variables are all correlated, with the lowest correlation of -.286 (attitude towards advertising * privacy concerns) and the highest correlation of -.459 (attitude towards advertising * likelihood of accepting OBA). If the independent variables are highly correlated they measure the same construct and thus the regression model becomes unstable, because every variable should independently measure a construct. There are no high correlations (0.85 or above), but the correlations are all highly significant, so another test was needed to see whether the correlations were problematic. To test for this, we calculated the variance inflation factor (VIF) for all the variables. To see if a predictor has a strong linear relationship with other predictors the VIF scores can be calculated. The variance inflation factor measures the extent to which the behaviour (variance) of an independent variable is inflated or influenced by the

interaction/correlation with the other independent variables. If the VIF value of a predictor is above 10 the change of multicollinearity within the variables is high, if the VIF score is higher than 5 than further investigation is necessary (Myers, 1990). All VIF scores were calculated and were below 5, so no problems with multicollinearity should occur in the analysis.

Subsequently, the Cronbach's Alpha of the different variables are studied, which consist of multiple 7-point Likert scale items. The Cronbach's Alpha is a common way to test whether multiple items measure the same construct or dimension. The Cronbach's Alpha does this by measuring the internal consistency of a group of items, thus it measures how closely related the items in the group are (Cronbach, 1951). The Cronbach's alpha should score at least .7, all the scores are higher than .7, which indicates that distributive justice, privacy concerns, attitude towards advertising and likelihood of accepting OBA are all above the desired threshold. Furthermore, we examined the factor and cross loadings of the different constructs. An overview of the factor analysis rotated (varimax) component matrix is given in Appendix E2. Almost all items have a factor loading above .8. Only distributive justice has an item which yields a factor loading of .598 but removing this item does not result in a substantial increase of composite reliability, therefore we do not exclude this item.

We used a scenario-based experiment with a post-survey, a form of survey commonly used in marketing research (Bleier & Eisenbeiss, 2015; Goldfarb & Tucker, 2011; Schumann, Wangenheim, & Groene, 2014). Online experiments tend to have problems with internal validity because of the lack of controlling the experiment (Hoffman & Morgan, 2011). Respondents can be distracted if they fill in the survey when they are at a non-controlled location. It is hard to control for this, so we excluded respondents who finished the survey in under two minutes. One of the benefits of using an online experiment is that the collection of data is relatively fast, thereby reaching more diverse samples is easier. This makes the findings of an online experiment easier to generalize, and so there should not be problems with the external validity of this study.

Lastly, we mentioned that the information the respondents gave us will be treated anonymously, their information is treated confidentially and is only used for academic purposes. Also, it was made sure that all the questions and the scenario were as unambiguous as possible.

4.3. Checking assumptions for OLS regression

When we were doing checks for the assumptions of OLS regression, the first noticed was the bimodal distribution of likelihood to accept OBA. Graphs and boxplots which were used to test for the assumptions are found in Appendix E3. The distribution of likelihood to accept OBA is not normally distributed, there are two peaks, at the scores of two and six. The data is not perfectly bimodal, but there are two trends in the data, a relatively negative and a relatively positive. Nonetheless, the first assumption that we tested which was the assumption of normally distributed residuals of the regression is not violated. The P plot of the regression is given in Appendix E3.2, which shows a normal distribution of the residuals, so even with this bimodal independent variable OLS regression is an appropriate way to test the hypothesis. We checked, with stem and leaf plots, if the relationships of the independent variables with the dependent variable were linear. We did not find big departures of normality for the independent variables, so the assumption of linear relationships was also met.

The third assumption we checked was the assumption of equality of variance. We used a scatterplot of the standardized residuals and the standardized predicted value. The plot is found in Appendix E3.3 the dots in the plot should be spread randomly and form a rectangular shape (Field, 2009). The plot included in Appendix E3 shows a rectangular shape around the dots, but it has a negative trend. The rectangular shape is tilted to the right, so there could be a problem with the homoscedasticity, however it is not a clear case of heteroscedasticity where the dots should form a triangular shape. The existence of heteroscedasticity in a regression model is problematic, because OLS regression aims to minimize the residues and so produce the smallest possible standard errors. OLS regression gives equal weight to all the observations, so cases with large disturbance in the size of the error become of more influence than the other observations. This results in biased standard errors in the regression, which is problematic for OLS regression because the standard error is used to test for significance, so biased standard errors leads to biased p-values of the regression coefficients and thus to incorrect conclusions. Therefore, the statistical power of the analysis decreases, which makes the results not generalizable (Hayes & Cai, 2007). There are ways to remove the heteroscedasticity by transforming the variables by the mean of the natural log and square root (Hayes & Cai, 2007). Unfortunately, both transformations did not have effect on the equality of variances, so transforming the variables will not resolve this problem. Therefore,

it is important to know whether the form of heteroscedasticity we encountered is influencing the OLS regression. To test whether this is a problem, we used a test developed by A. F. Hayes (2007), which uses heteroscedasticity-consistent standard errors estimators to run OLS regression. When using this approach, the model is estimated with the OLS regression method, but the standard errors are estimated in an alternative way which does not assume homoscedasticity. In order to do the test a SPSS macro was downloaded from the website of A. F. Hayes, the macro was installed on SPSS and then the analysis was run on the base model and the interaction effects. To see if there are large changes in the model, the outcome of the Hayes test is compared with the outcome of the OLS regression. The table presenting the two analyses is found in Appendix E3.5. The changes in the standard error and P-values of the analysis are minor, significant effects do not turn non-significant and vice-versa. There are some small changes in the outcome of the model, these are not big enough to indicate that the OLS regression model is not usable. Nonetheless, we also used another test to check if the heteroscedasticity is problematic. We used the Breusch-Pagan test, to determine if the assumption of homoscedasticity is violated. The Breusch-Pagan test uses an auxiliary regression of the squared residuals on the independent variables. The R^2 of this regression is then divided by 2 and used as the test statistic for a Lagrange multiplier test, with the number of independent variables as the degrees of freedom (Breusch & Pagan, 1979). The null hypothesis of this test is homoscedasticity, so a non-significant outcome indicates that the assumption of equality of variance is not violated. We ran the analysis with SPSS, we used a macro made by Ahmad Daryanto(2018) for this test. The outcome of this test was non-significant and thus the assumption of equality of variance is not violated (Df = 34, LM = 38.193, p = .285).

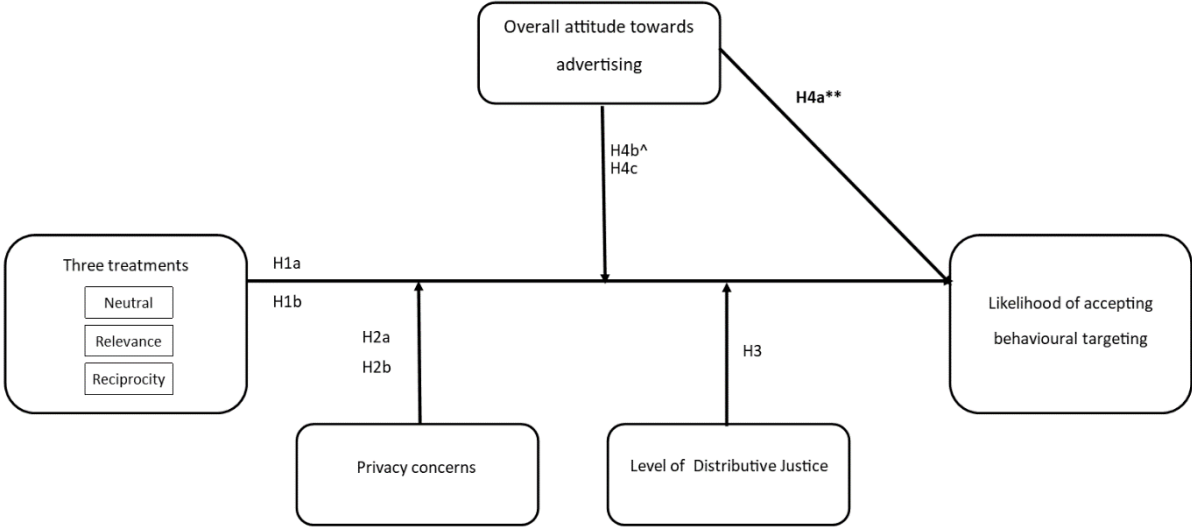
The fourth assumption which we checked was the assumption of no multicollinearity, which we already discussed in 4.2, where we used the VIF factors of the regression to determine that there were no problems with multicollinearity because the VIF factors were all below the threshold of 10.

The last assumption we checked was the assumption that there are no influential cases biasing our model or in other words checking for outliers. Outliers can have a bad influence on the model which makes it less precise. Therefore, it is important to check for outliers and when

needed remove the outliers. We checked for outliers by checking boxplots of all the variables, we excluded three cases from the main analyses. Thereafter, we used the Cook’s distance, a measure of the overall influence of a single case on the model. The Cook’s distance is a combination of each observations residual values and leverage, so the higher the residual values and leverage are the higher the Cook’s distance is. If the Cook’s distance is above one this may be of concern and need further investigation (Field, 2009). We checked the observations with a Cook’s value above one and deleted seven more cases on the basis of the Cook’s distance. Therefore, the actual sample size we used to test the hypothesis consist of 330 cases.

4.4 Hypothesis testing

In this section the hypotheses are tested and the outcomes are discussed. Figure 9 gives an overview of the conceptual framework with the significance of the hypotheses. The confirmed hypothesis is marked bold.



RL = Relevance appeal, RC = Reciprocal appeal
 (^p<.1, *p<.05, **p<.01, ***p<.001)

figure 9 - Framework with effects

4.4.1 Main effect of using different appeals

According to the main hypothesis the use of different appeals would influence the likelihood of accepting OBA, with making use of a reciprocity appeal resulting in a higher likelihood of accepting OBA in comparison with the relevance appeal. The relevance and reciprocity appeals are added in the regression as dummy, the neutral message was used as base for the

comparison. The main effect of using a reciprocity appeal has a positive but non-significant effect (RC→LOBA $\beta = .201$ $p > .1$). Whereas the relevance appeal has a small negative effect which is also non-significant (RL→LOBA $\beta = -.080$ $p > .1$). These results are contrary to the findings of Schumann, Wangenheim and Groene (2014), where the reciprocity appeal evoked a significantly higher likelihood of accepting OBA. To better understand these findings, the mean scores of the likelihood of accepting OBA by the three treatments are given in figure 10.

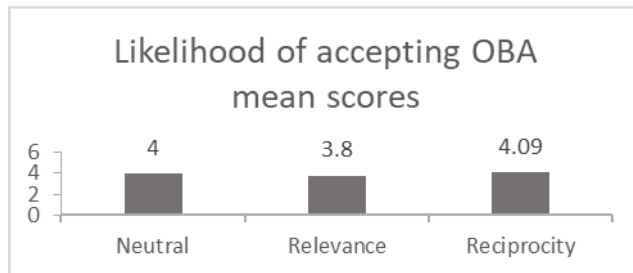


figure 10 - Mean score Likelihood of accepting OBA

The means for the different treatments all are around 4, so the neutral score on a 7-point Likert scale. We used a two-sided ANOVA to test whether the difference in means was significant, but the differences are non-significant ANOVA ($F(2,228) = .377$, $p = .686$). Which makes sense if the effect of different treatments are small and non-significant. To further investigate if there are other variables which explain this neutral outcome of the treatment effect we checked whether some of the control variables have influence on the mean of likelihood. Table 7 gives an overview of the most important findings.

Table 7 - Robustness test different appeals

Treatment	Base model	Gender		Accept cookies		Visit news website	
		Male	Female	Yes	No	Yes	No
Neutral	4	3.84	4.30	4.63	2.07	4.03	3.17
Relevance	3.8	4.09	3.69 [^]	4.49	2.26	3.88	3.83
Reciprocity	4.09	4.01	4.11	4.78	2.2	4.11	3.96

([^] $p < .1$, * $p < .05$, ** $p < .01$, *** $p < 0.001$) *(only 25 respondents (7.5%) never visit news websites)

The first thing that is noticeable is that the only significant (at the 90% confidence interval) difference in means is found in women where the relevance appeal evoked the lowest likelihood of accepting OBA. Another interesting observation is that the neutral appeal results in the highest likelihood for females. The significant difference in means of the neutral appeal and relevance appeal by women leads to the slightly negative effect of relevance. Males react

differently on the appeals, where the neutral appeal results in the lowest mean and the relevance appeal in the highest, with slightly lower mean for the reciprocity appeal.

The clearest trend in the mean likelihood of accepting OBA is seen in the acceptance of cookies, this question was asked to make the experiment as realistic as possible (Yes=73.7%, No=26.3%). This trend makes sense, because people who are not willing to accept cookies probably know what the cookies are used for. Thus, they do not want to be tracked or get personalized online advertisements. All the means of the people who accepted the cookies are higher than the base model and the ones for people who did not accept the cookies are lower than the base model, which again shows a divided position regarding cookies and thus OBA. This is also seen in the bimodal distribution of the likelihood of accepting OBA.

Whether the respondents visit online news websites or not does influence the likelihood of accepting OBA, respondents who do not visit news websites tend to have a lower likelihood of accepting OBA, but only a small group of the respondents did not visit news websites (7.5%).

4.4.2 Main effect of attitude towards advertising

As proposed the main effect of a more positive attitude towards advertising should positively influence the likelihood of accepting OBA. The effect of attitude towards advertising has a significant positive effect on the likelihood of accepting OBA ($ATT \rightarrow LOBA \beta = .243^{**} p < .001$). Therefore, a more positive attitude towards advertising results in a higher likelihood to accept OBA. Consumers tend to have a strong attitude towards advertising, because they encounter ads daily (Bauer, Reichardt, Barnes, & Neumann, 2005). A positive attitude towards advertisement is mostly found by consumers who are described by the following demographic characteristics: young, males, persons with lower education, lower income and non-whites (Shavitt, Lowrey, & Heafner, 1998). The mean attitude for males was slightly higher compared to the mean of females (4.02 – 3.81). The mean of attitude towards advertising was lowest (2.94) for consumers with an age above 55 years and highest (4.86) for consumers with an age between 41 – 45, which is in contrast with the literature because older people are expected to have a more negative attitude towards advertising. In this study, the lower age brackets scored lower than most of the old brackets. The highest achieved education did not influence the attitude towards advertising, only consumers with a doctorate degree had a lower attitude. The contrary findings could be explained by the lack of respondents in some groups, a table with an overview of the demographics on attitude towards advertising is given in

Appendix E4. To summarize the main effects, table 8 provides the main effects with and without the control variables.

Table 8 - Main effects and controls

	Likelihood of accepting OBA	
	Base model	+ Controls
Relevance appeal	-.186	-.080
Reciprocity appeal	.141	.201
Attitude towards advertising	.478***	.243***
Demographics	No	Yes
Experimental controls	No	Yes
Online behaviour and background	No	Yes
Constant	4.005***	3.425***
R2	.120	.461

([^]p<.1, *p<.05, **p<.01, ***p<0.001)

4.4.3 Moderation effects

The moderation effects are calculated by adding the main effect and the interaction effect of privacy concerns to the regression model. The other two moderating variables are also added to the model in this way. To get more insights in the moderation effects of privacy concerns, attitude towards advertising and need for distributive justice we made use of the PROCESS test to further investigate these effects. This test is developed by Andrew F. Hayes, which is based on regression but also provides clear output to plot the data to better understand the interaction (Hayes, 2012). Table 9, which is found on the next page, gives an overview of the coefficients of the regression with the interaction terms included.

Table 9 - Moderation effects in regression

	Likelihood of accepting OBA	
	Base model	+ Interaction
Reciprocity appeal	.082	0.78
Relevance appeal	.023	0.35
Privacy concerns	-.242**	-.232*
Distributive justice	.290**	.278*
Attitude towards advertising	.136*	.284*
Reciprocity appeal * Privacy concerns		.063
Reciprocity appeal * Distributive justice		-.020
Reciprocity appeal * Attitude towards advertising		-.219
Relevance appeal * Privacy concerns		-.085
Relevance appeal * Attitude towards advertising		-.177
Controls	Yes	Yes
Constant	3.936***	4.008***
R2	.310	.531

([^]p<.1, *p<.05, **p<.01, ***p<0.001)

4.4.3.1 Moderation effect of privacy concerns

Existing literature found that privacy concerns negatively influence the online ad industry (Bleier & Eisenbeiss, 2015; Cho & Cheon, 2014; Goldfarb & Tucker, 2011), the findings of this study are in line with the existing literature. The level of privacy concerns has a significant negative effect on the likelihood of accepting OBA (PC→LOBA $\beta = -.242$ $p < .001$). Which indicates that people with higher level of privacy concerns are less likely to accept OBA, which research on OBA acceptance has also found (Schumann, Wangenheim, & Groene, 2014).

H2a and H2b proposed that privacy concerns would negatively influence the effect of the reciprocity appeal as the relevance appeal. Both effects are small and non-significant ($\Delta PC \rightarrow RC$ $\beta = .063$ $p > .1$) ($\Delta PC \rightarrow RL$ $\beta = -.085$ $p > .1$).

We also examined if the effect of using a reciprocity appeal and a relevance appeal on the likelihood of accepting OBA was moderated by the effect of privacy concerns by using the PROCESS analyses. The interaction term for the use of a reciprocity appeal and privacy concerns was non-significant, $B = .123$, $SE = .079$, $t(331) = 1.000$, $p = .318$. Privacy concerns also did not moderate the effect of a relevance appeal, the interaction term was also found to

be non-significant, $B = -.078$, $SE = .128$, $t(331) = -.614$, $p = .5396$. This concludes that there is no moderation effect of privacy concerns and we thus reject hypotheses H2a and H2b.

4.4.3.2 Moderation effect of distributive justice

The need for distributive justice should influence the effect of reciprocity appeal in a positive way, when people feel a higher need for distributive justice they feel the need to give something back (Schumann, Wangenheim, & Groene, 2014).

The need for distributive justice has a positive significant effect on the likelihood of accepting OBA (NDJ→LOBA $\beta = .290$ $p < .001$), which is in line with research done by Schumann, Wangenheim and Groene (2014). Nonetheless, the need for distributive justice does not influence the effect of the reciprocity appeal ($\Delta DJ \rightarrow RC$ $\beta = -.020$ $p > .1$).

Nonetheless, we used the PROCESS analysis to examine the moderation better of the need for distributive justice on the effect of using a reciprocity appeal on the likelihood of accepting OBA. The interaction was found to be non-significant, $B = -.076$, $SE = .123$, $t(331) = -.618$, $p = .5372$. Therefore, hypothesis H3 is rejected.

4.4.3.3 Moderation effect of attitude towards advertising

Besides the main effect of attitude towards advertising a proposed moderating effect is also formed given H4b and H4c. A more positive attitude should result in a more positive effect of the different appeals on the likelihood of accepting OBA. Again, we tested for the moderation effect on both the use of a reciprocity and a relevance appeal.

Attitude towards advertising has a significant main effect (ATT→LOBA $\beta = .136$ $p < .05$), So the effect of attitude towards advertising is not as strong as the effect of distributive justice and privacy concerns. The interaction effect in the regression model is non-significant for both reciprocity appeal ($\Delta ATT \rightarrow RC$ $\beta = -.210$ $p > .1$) and the relevance appeal ($\Delta ATT \rightarrow RL$ $\beta = -.241$ $p > .1$).

To further analyse the moderation effect, we used a PROCESS analysis. The interaction term of attitude towards advertising on the effect of using a reciprocity appeal on the likelihood of accepting OBA was found non-significant ($p < .1$) but with such a low p-value it was worth investigating this interaction, $B = -.2196$, $SE = .1259$, $t(331) = -1.7437$, $p = .082$. We conducted a spotlight analysis to break down the interaction term and examine the effect of using a reciprocity appeal on the likelihood to accept OBA at different levels of attitude towards

advertising (Hayes, 2012). We first examined the effect when the attitude was low (1SD below the mean: 2.57), this effect was significant, $B = .5226$, $SE = .237$, $t(331) = 2.205$, $p = .0282$. The effect of the reciprocity appeal was not significant when a neutral attitude towards advertising (3.88) or a positive attitude towards advertising (1SD above the mean: 5.188), $B = .2355$, $SE = .172$, $t(331) = 1.369$, $p = .172$ and $B = -.0517$, $SE = .239$, $t(331) = -.2160$, $p = .8292$.

This indicates that, when the attitude towards advertising is low and a reciprocity appeal is used the likelihood of accepting OBA is increased by .5226. When using the PROCESS analysis the turning point of the interaction can also be examined, this is done by the Johnson-Neyman output (Hayes, 2012), this output gives a table with the exact point where the relationship between using a reciprocity appeal and the attitude towards advertising is exactly 0.5. It also gives the percent of the data what is below that point and which is above that point. The turning point of significance for the interaction of a reciprocity appeal and attitude towards advertising is 3.2704, so only when the attitude towards advertising is as low as 3.2704 a reciprocity appeal has a positive effect on the likelihood of accepting OBA $B = .2694$, $SE = .1877$, $t(331) = -1.9678$, $p = .05$. The full output is given in Appendix E5.

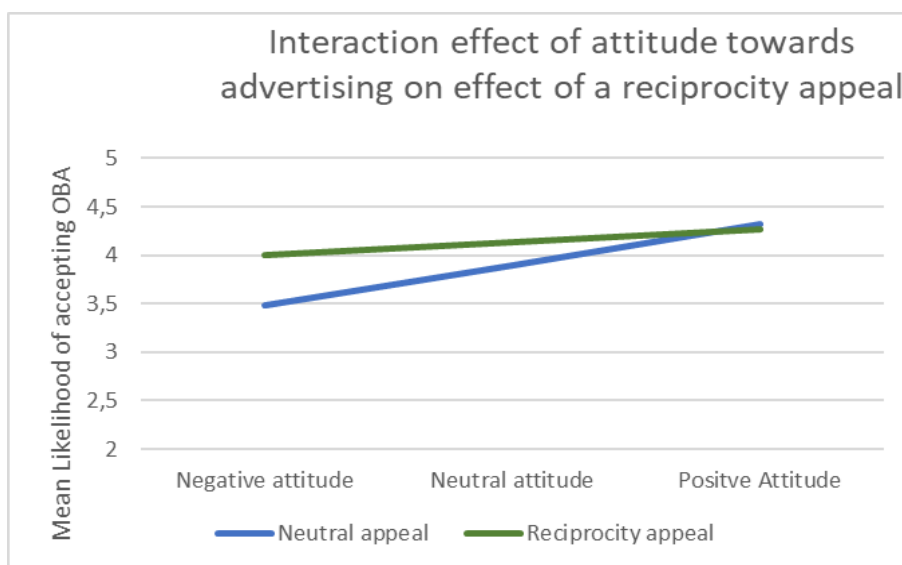


figure 11 - Influence of attitude towards advertising on using a reciprocity appeal

Therefore, reciprocity appeals result in a higher likelihood of accepting OBA when people have a negative attitude towards advertising, as how lower the attitude towards advertising how stronger the effect of a reciprocity appeal. The reciprocity appeal does not seem to influence the likelihood of accepting when the person has a positive attitude towards advertising.

We also examined whether attitude towards advertising moderated the effect of relevance appeals on the likelihood of accepting OBA. The interaction term was found to be non-significant, $B = -.053$, $SE = .134$, $t(331) = -.393$, $p = .695$. Therefore, both hypotheses H4b and H4c are rejected.

4.4.5 Overview of Hypotheses

#	Hypothesis	
H1a.	Using a reciprocity appeal to convince consumers results in a higher likelihood of accepting OBA	Rejected
H1b.	Using a relevance appeal to convince consumers results in a lower likelihood of accepting OBA	Rejected
H2a.	Higher level of privacy concerns negatively influences the effect of a reciprocity appeal on the likelihood of accepting OBA.	Rejected
H2b.	Higher level of privacy concerns negatively influences the effect of a relevance appeal on the likelihood of accepting OBA.	Rejected
H3.	The effect of a reciprocity appeal on likelihood of accepting OBA is positively influenced when the need for distributive justice is higher	Rejected
H4a	A more positive attitude towards advertising results in a higher likelihood of accepting OBA.	Confirmed
H4b	The likelihood of accepting OBA increases when a more positive attitude towards advertising is combined with the reciprocity appeal.	Rejected
H4c	The likelihood of accepting OBA increases when a more positive attitude towards advertising is combined with the relevance appeal.	Rejected

4.6 Other findings

In this section we report findings which do not cover hypotheses, but which we considered worth mentioning. The effect of gender on the use of relevance appeal is discussed in this section.

4.6.1 Influence of gender on relevance appeal

In the main analysis we controlled for gender and saw that being a woman had a significant negative effect on the likelihood to accept OBA (FEM→LOBA $\beta=-.400$ $p<.05$). Therefore, we decided to do a moderator analysis to see if this effect had any relations with the different kind of appeals. In §4.4.1 we investigated the mean likelihood of OBA for the different appeals and the effect of some control variables. The only significant change in likelihood of accepting OBA per treatments was found in women, where the relevance appeal evoked the lowest mean. We used the PROCESS macro from A. Hayes to test for a moderating effect of gender on the use of the two appeals.

We examined whether the effect of a relevance appeal on the likelihood of accepting OBA was moderated by gender. The interaction term was statistically significant, indicating that the effect of a relevance appeal is different for males and females, $B = .8297$, $SE = .3426$, $t(331) = 2.4215$, $p = .0160$. We further examined the conditional effect of using a relevance appeal on the likelihood of accepting OBA for men and women. The effect for males was positive but not significant, $B = .2131$, $SE = .2302$, $t(331) = .9253$, $p = .3555$. The effect for females was significant and negative, $B = -.6166$, $SE = .2594$, $t(331) = -2.3769$, $p = .0181$. Therefore, using a relevance appeal has a negative effect ($B = -.6166$) on the likelihood of accepting OBA, but only for women.

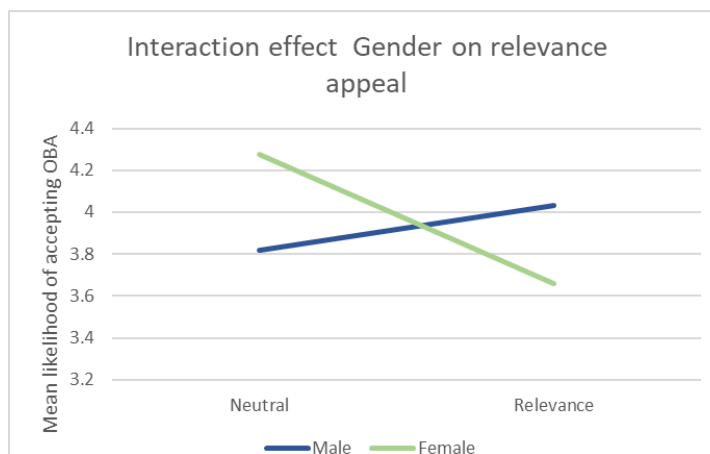


figure 12 - Influence of relevance appeal on likelihood of accepting OBA Male vs. female

5. Discussion and conclusion

In this chapter the results of analysis will be discussed and be compared to the conceptual framework and existing literature. The differences or similarities we found in our results are discussed and used to answer the main research question. Thereafter, the managerial and academic implications are described. Lastly, the limitations of this study and suggestions for further research are given.

The main focus of this research is to examine whether the use of different appeals can positively influence Dutch consumers' willingness to accept cookies and thus accept online behavioural advertising. Convincing consumers to accept cookies was already a part of online advertising the last couple of years, but since the laws on the collection of data have changed the acceptance of OBA is of greater importance than ever. The world is changing rapidly with the introduction of more and more new technologies, which results in new laws regarding the use of these technologies. Therefore, the GDPR was set up which changed the simplicity of collecting data for online marketers, nonetheless the same data is still used by marketers to reach their target group. The effectiveness of online ads increases when marketers use personalization in their ads (Bleier & Eisenbeiss, 2015), but the choice of giving personal data to use for personalization now lies with the consumers. Therefore, it is of utmost importance for marketers to influence this choice to be able to use the most effective way of online advertising. The use of reciprocity appeals to convince consumers to accept OBA was introduced in 2014 by Schumann, Wangenheim and Groene in Germany. This makes a contrast to the industry standard, which makes use of a relevance appeal to convince consumers with the fact that they will face relevant ads in the near future. Besides the effect of the different appeals on the likelihood to accept OBA, the possible effect of distributive justice, attitude towards advertising and privacy concerns on the effect of the different appeals were also examined. No research was identified where these moderation effects were already tested, but we thought that these constructs could have an influence on the effect of the appeal. This led to the following research questions:

To what extent do reciprocity and relevance, appeals increase the likelihood of ad acceptance, and is this relationship moderated by privacy related variables?

To answer this question in completeness, the possible main and moderation effects are discussed and so the answer on the research question is given.

5.1 General discussion main effects

5.1.1 Main effect of reciprocity and relevance appeals

Only one main study was identified based on different appeals to convince consumers to accept OBA and that is the research by Schumann, Wangenheim and Groene (2014). Based on that research we formulated a hypothesis which stated that the use of reciprocity appeals would influence the likelihood of accepting OBA in a positive way. Contrary to our expectations this proved not the case, the effect of a reciprocity appeal is found to be positive but non-significant. The use of a relevance appeal was found slightly negative and non-significant.

The theory about reciprocity stated that people feel the need for distributive justice when they get a feeling of indebtedness, which occurs when a person has a feeling that someone else already put an effort in something they participated in, e.g. a social exchange (Gouldner, 1960). One of the reasons why people feel the need to reciprocate is that they want to hold a positive self-image. Although the internet is an anonymous setting, we thought that the reciprocity appeal still would be enough to evoke the need to reciprocate. The message which was created during this research should have evoked a need to give something back to the site, which was online personal information, but this did not occur.

We then checked if there were other variables which influenced the effect of the different treatments on the likelihood of accepting OBA. The respondents who did not accept the cookies had a very low likelihood of accepting OBA, which means that people who have a negative feeling about cookies will not accept them and thus also do not have a high likelihood to accept OBA. There was one more interesting point in the data, the combination of the relevance appeal and women. The relevance appeal resulted in the lowest mean score of likelihood to accept OBA in women, which indicates that women are less sensitive to the relevance appeal. But apart from the different appeals not changing the mean likelihood on those control variables, they were almost equal. This means that the different appeals did not have any influence on the likelihood of accepting OBA.

The contrast in findings with the existing literature could be caused by the effectiveness of so called “Cookie walls” in the Netherlands. Dutch consumers have encountered a lot of pop-up messages regarding the acceptance of cookies since 2013 (Oosterveer, 2015). This has led to ignoring this kind of messages altogether by Dutch consumers, because Dutch consumers always had to click “Accept cookies” if they wanted to use a website. Which inflicted a situation where Dutch consumers just click the “accept” button to make use of the website (Aipassa, Homburg, & Smit, 2016).

5.1.2 Main effect attitude towards advertising

A positive attitude towards advertising had a positive effect ($B=.243, p<.001$) on the likelihood of accepting OBA. This is in contrast with the findings of existing literature of Schumann, Wangenheim and Groene, where the attitude had a non-significant effect on the acceptance of OBA. Nonetheless, we expected it to influence the likelihood of accepting OBA, because consumers need to be convinced to accept OBA and they already have an attitude towards ads which makes this process more complicated. Existing literature stated that older, Caucasian, higher educated and above average earning people have a more negative attitude towards advertising (Shavitt, Lowrey, & Heafner, 1998). In this study the opposite was found, where people in the age bracket of 31-50 had the highest likelihood of accepting OBA mean and the younger respondents had a mean around 4 which indicates a neutral attitude. The older respondents, so from 51 till above 55 years did have a slightly lower attitude which was negative (below the neutral mean of 4). The uneven distribution of age in the respondents makes these findings not generalizable. The effect of attitude controlled for age is significant, so attitude has a significant effect on the likelihood of accepting OBA.

5.2 General discussion moderating effects

5.2.1 Moderating effect of Privacy concerns

Privacy concerns are an influential factor in the online advertisement industry, privacy concerns affect the effectiveness of online ads (Bleier & Eisenbeiss, 2015), but studies regarding acceptance of ads also show that privacy concerns are an important factor for the acceptance as well (Chellappa & Sin, 2005; Sheng, Nah, & Siau, 2008; Schumann, Wangenheim, & Groene, 2014). Privacy concerns tend to have a negative effect on the effectiveness and acceptance of online advertisements. Therefore, we hypothesised that higher level of privacy concerns would negatively influence the effect of the different appeals,

however no moderation effect of privacy concerns on the use of different appeals was found. Therefore, we had to reject H2a and H2b, so in this neutral scenario where respondents did not have any associations with the website, privacy concerns did not influence the effect of the appeals.

Nonetheless, the unconditional effect of privacy concerns had a significant effect on the likelihood of accepting OBA. This analysis was not used to test hypotheses but showed a significant negative effect of privacy concerns on the likelihood of accepting OBA ($B = -.232$, $p < .05$). This means that privacy concerns also in this study have a negative effect on the acceptance of OBA, which is in line with the existing literature.

5.2.2 Moderating effect of need for distributive justice

People who feel the need for distributive justice want to give something in return to the party which already has given something (Wirtz & Lwin, 2009). Therefore, we tested if people with a high need for distributive justice were more influenced by a reciprocity appeal. No significant interaction effect was found in this research. The reciprocity appeal should influence the need for distributive justice and therefore we thought that the need for distributive justice should moderate the effect of a reciprocity appeal.

When we examined the unconditional effect of the need for distributive justice, we found a positive significant effect ($B = .278$, $p < .05$), which indicates that it does influence the likelihood of accepting OBA, which is in line with the research of Schumann, Wangenheim and Groene (2014). This means that, as for privacy concerns, the need for distributive justice has influence on the acceptance of OBA, but in the model, we used to test our hypotheses we did not include the main effects of these variables.

5.2.3 Moderating effect of attitude towards advertising

Whilst we tested for a main effect of attitude towards advertising we also tested for a moderating effect of attitude towards advertising. The attitude towards advertising is formed by the prior experiences with ads online, this attitude is found to be negative (Alwitt & Prabhaker, 1994; Zano, 1984), but also to be positive (Shavitt, Lowrey, & Heafner, 1998). The mixed findings in the existing literature indicates that the attitude varies from person to person. When we tested for the moderating effect of attitude towards advertising we found a significant (90% confidence interval) negative effect ($B = -.2185$, $p = .082$) of the interaction

between the attitude and the use of a reciprocity appeal. When further investigating this effect, we found that the interaction was only significant for people with a negative attitude towards advertising and had a positive effect. This means that people who generally do not like ads are positively influenced by the reciprocity appeal. Thus, the reciprocity appeal has effect on people with a negative attitude towards advertising. In contrast, the reciprocity appeal does not influence people with a more positive attitude towards advertising, which we thought it would affect. The contradicting findings are possibly found, because people with a more positive attitude towards advertising are already more likely to accept OBA. Therefore, the different appeals do not affect the reaction as much, where consumers with a negative attitude towards advertising can be influenced by a reciprocity appeal. Consumers with a negative attitude towards advertising can be more easily influenced, because they would normally not accept OBA, but when they read the website needs it the appeal could change their mind. This indicates that the use of a reciprocity appeal can result in a higher likelihood of accepting OBA when consumers have a negative attitude towards advertising.

5.3 Implications of theory

This study has extended the research about acceptance of OBA by doing research on this topic in the Netherlands. Where a study in Germany has shown that the use of reciprocity appeals increased the acceptance of OBA (Schumann, Wangenheim, & Groene, 2014), our study only found a significant influence of the use of reciprocity appeals by people with a negative attitude towards advertising in general. No significant effect was found of the different appeals on the likelihood of accepting OBA, which means that Dutch consumers may be less suggestible than German consumers. This could be caused by the fact that Dutch consumers have gained some experience with “Cookie-walls” and thus are not easily influenced by these messages.

This study also contributes to research on the effect of online privacy concerns on the acceptance of OBA, which was formerly stated in research about the effect of privacy concerns on online advertising acceptance and effectiveness (Chellappa & Sin, 2005; Sheng, Nah, & Siau, 2008; Aguirre, Mahr, Grewal, Ruyter, & Wetzels, 2015; Bleier & Eisenbeiss, 2015). All these studies also found a negative influence of privacy concerns with the acceptance and effectiveness of online advertisement.

Moreover, this study found a negative influence of the industry standard on female consumers, where the use of a relevance appeal had a negative influence on the acceptance of OBA. The difference of acceptance OBA by males and females is yet not examined in existing literature, so this is a potential for further research.

5.4 Managerial implications

In addition to academic implications this study also provides some insights for websites which rely on the revenue of ads and make use of online behavioural advertising to reach their revenue goals. The ongoing change of technologies and consumer protective laws makes the online advertising industry an interesting topic of research. This study found that Dutch consumers were not influenced by different appeals to convince them of accepting OBA. Therefore, the implication is that such appeals should be done with caution. Nonetheless, the use of a reciprocity appeal did influence people with a negative attitude towards advertising. Therefore, this could be helpful for website's which have an audience with a more negative attitude towards advertising, where consumers which are elder, white, high educated and have a high income tend to be the group who have a more negative attitude towards advertising (Shavitt, Lowrey, & Heafner, 1998). Websites with a target audience which fits these characteristics could benefit from using a reciprocity appeal. The use of a relevance appeal had a negative influence on female consumers, so a reciprocity appeal has the least cons of the two appeals. If site owners must choose what kind of appeal they are going to use to convince consumers I suggest using a reciprocity appeal, but other forms to convince people should be tested in order to see if Dutch consumers can be influenced in another way.

5.4.1 Online privacy concerns

Companies could try to minimize online privacy concerns which Dutch consumers have right now. Privacy concerns play an important role in the online ad industry, so focusing on privacy concerns rather than directly focussing on the acceptance of OBA might be helpful. If a company can decrease online privacy concerns of their visitors this will indirectly influence the acceptance of OBA in a positive way. To do so, these companies must be more transparent in their way of data gathering and protecting the data of the consumers. That is a hard task because the more transparent a company, the more vulnerable it is in the protection of the data. All in all, there is enough room for improvement when it comes to acceptance to OBA, where using reciprocity appeals could be a good first step.

5.5 Limitations and further research

Research has limitations. This study is no exception and those limitations should be acknowledged. In addition to treating the limitations of this research, directions for further research on this topic are proposed. The constant change in online ad technology and the acceptance of these technologies is of great value for the online advertising industry and further research regarding this topic has a great potential for academic and managerial relevance. The way companies convince consumers to give personal information will change with new technologies, the strict laws that are developed to protect consumers will make it harder for companies to provide personalized online ads. So, further research on the way to convince people and the underlying factors is needed to keep online ads effective.

When the conceptual model was formed, the effect of reciprocity appeals was expected to influence the likelihood of acceptance and in such a way that the different kinds of appeals would be the main focus of this research. But the opposite was found in the analysis, the different moderators being of greater influence than the appeals themselves. That made the model not reach its full potential. During the analysis the main effects of the moderators were significant, this means that where the model was built on the appeals only, it should have been built on the appeals as well as on other factors affecting the likelihood of accepting OBA. This research was based on the moderation of one main effect, whereas the main effect proved to be non-significant. This is a result of optimistic thinking, where the main effect had to be significant, whereas a possible failure of an effect should have been accounted for. Therefore, no hypotheses were formulated regarding the main effects of the moderating variables, which makes this research less influential because of the missing interpretation of significant factors.

The scenario-based experiment was made and completed on Qualtrics, which is different from a setting in real life. The first thing to mention is the fact that Qualtrics does not support a function where images can be shown on full screen. Although it was mentioned to participants that they could zoom in, this still results in pictures of the “website” and appeal which are less realistic. Further research, to test whether the effect is the same in real life, should make use of a real website to test the appeals. Unfortunately, this study did not have the resources to make a website and incorporate this website in the survey.

No significant influence was found of the different appeals on the likelihood of accepting OBA, the likelihood of accepting OBA scores were relatively low or relatively high, the data showed that there was a bimodal distribution of the likelihood to accept OBA. This could be explained by something else than the different treatments, namely whether the respondents read the text or did not read the text and just get right on with the survey. This could be the case because Dutch consumers who use websites have encountered a lot of this kind of appeals in the last couple of years, where they always had to click “Yes, I accept the cookies”. This has led to a situation where Dutch consumers just click the “accept” button to make use of the website (Aipassa, Homburg, & Smit, 2016). If a large part of the respondents did not read the message, the different treatments are not able to influence the thoughts of the consumers. We did not use a control to see whether the participants had read the message or not. When consumers face these kinds of appeals in real-life they can ignore them, but this research was a perfect opportunity to test whether the respondents did read the appeal or not. Therefore, the effectiveness of using appeals could be of higher value than it is right now, this is a valuable option for further research.

Besides the lack of control on the appeals in the experiment, we also adjusted the treatments after the pretest based on common sense. Due to the lack of time and the difficulty of getting respondents we chose not to test the treatments again. This may have led to the use of not totally qualified appeals, which may have resulted in the non-significant effect of the appeals. If the pre-test was done again, we could have determined if the appeals evoked the intended thought and thus have a better conclusion of the study. As for now there can only be speculated that there could be a problem with the appeals, where this could be known for certain. Therefore, this is a limitation of the research and the treatments should be tested again in further research.

When collecting the data, no particular group of respondents was approached. This resulted in a relatively large group of respondents in the age bracket of 20-30 with a relatively high level of education. This makes generalizing the outcomes of this research not optimal. Especially the effect of the appeals on consumers aged under 20 and aged between 35 and 50 are not generalizable. Therefore, research with an equal proportion in age and education is needed.

During the assumptions tests for OLS regression we encountered a form of heteroscedasticity, which was found by plotting the standardized residuals with the standardized predicted values. A violation of the homoscedasticity assumption is of great concern when OLS regression is used to analyse the effect of independent variable(s) on the dependent variable(s), it indicates that the model could be mis specified and therefore lead to wrong conclusions. Even though we tested the model with a test made by Andrew F Hayes (2007) and with the Breusch-Pagan test, which both indicated that there did not occur problems due to the heteroscedasticity, we cannot treat this as a fully homoscedastic model and thus generalizing the results should be done carefully.

5.6 Conclusion

The purpose of this research was to determine whether the use of a reciprocity appeal, to convince Dutch consumers of accepting OBA, was more effective than a relevance appeal. Furthermore, possible moderation effects of privacy related variables were tested. To test this a scenario-based online experiment was set-up via Qualtrics. Our findings show that convincing consumers to accept OBA with a reciprocity appeal is effective, but only when the attitude towards advertising is negative. Additionally we found that the effect of relevance appeals is influenced by gender, where females respondents negatively reacted on a relevance appeal. The combination of the effect of a reciprocity appeal on consumers with a negative attitude towards advertisement and the negative effect of a relevance appeal on the acceptance of OBA by females, makes the reciprocity appeal the best of the two.

This research gave insights in how to overcome one of the challenges marketers facing every day. Convincing consumers to give their online personal data is never going to be easy, but as long as marketers need it to provide better advertisements, it is needed to think about the best way to do it. As for this research concludes, using a reciprocity appeal is a better option than a relevance appeal, especially when the expected attitude towards advertising of the target audience is negative.

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Appendix

Appendix A – Cookie wall example

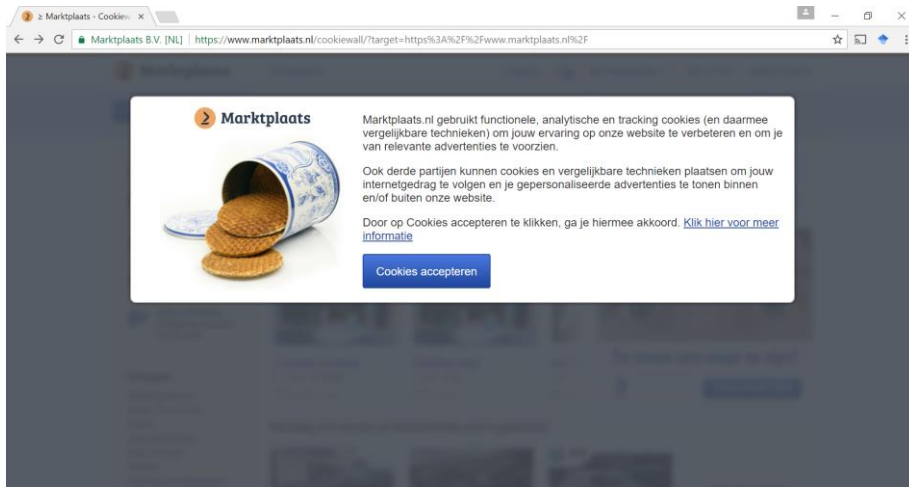


Figure 13 - Cookie wall example www.marktplaats.nl (marktplaats, 2017)

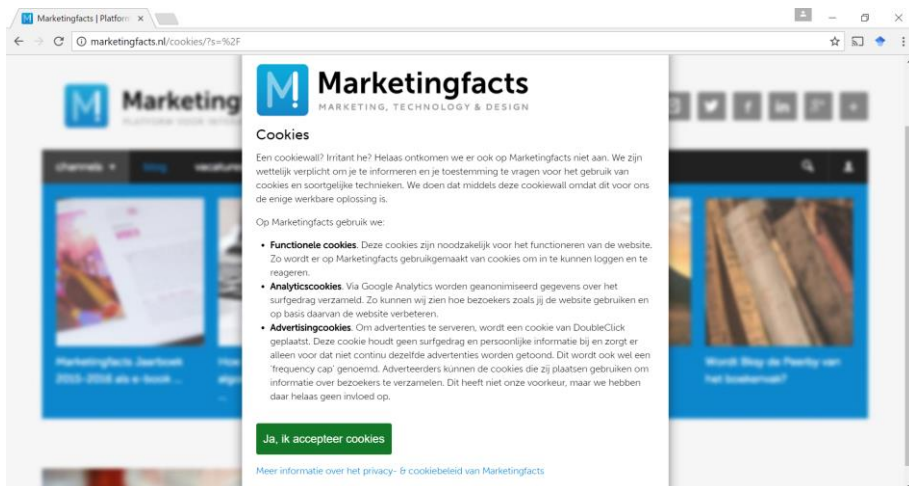


figure 14 - Cookie wall example www.marketingfacts.nl (marketingfacts, 2017)

Appendix B – Pretest survey

Page #1

Thank you for making some time to participate in this study!

This survey is part of my master thesis. The survey lasts approximately 5 minutes.

Points of importance:

1. Carefully read all the instructions and questions before answering. Beware that there might be some attention checks throughout the survey, anybody who carefully reads the questions will be able to spot them.
2. All information provided by the participants will be treated in strictest confidence. The results will only be published in aggregated form. Please note that participation in this survey is voluntary, so you may discontinue the survey at any time.
3. If you have any questions or comments you can contact Daan Ouwehand:
459399do@student.eur.nl.

Page #2

Imagine that you want to read the latest news. To do so you go online to your favourite free news site, but before you can surf the website a message pops-up. On the next page you will see such a message. Please read the message carefully before continuing the survey.

Page #3 (All three scenarios)

Neutral message	Relevance message	Reciprocity message
<p>Dear visitor,</p> <p>We are happy that you are visiting our website. Here, we offer the latest news and articles to you. Besides, we display advertisements to you.</p> <p>We would like to give our advertisers the possibility to reach their target group. Those visitors who read a lot about travel should see more advertisements on vacation offerings and fewer advertisements on other topics.</p> <p>In order to do so, we evaluate your surfing behavior based on unidentifiable information. [How does this work?] We assure you that we do not draw any conclusions regarding your identity. [Privacy Policy]</p> <p>Thank you for your time, Daag.nl</p>	<p>Dear visitor,</p> <p>We are happy that you are visiting our website. Here, we offer the latest news and articles to you. Besides, we display advertisements to you.</p> <p>We would like you to view advertisements you are interested in. For example, if you read a lot about travel, you will see more advertisements on vacations offerings and fewer advertisements on other topics.</p> <p>In order to do so, we evaluate your surfing behavior based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can see, edit or delete the information stored on you at any time at My Information.</p> <p>Thank you for your time, Daag.nl</p>	<p>Dear visitor,</p> <p>We are happy to offer you the latest news and articles for free. That is possible because we show you advertisements in exchange. Only this way can we keep our offering free of charge.</p> <p>We would like to give our advertisers the possibility to reach their target group. Those visitors who read a lot about travel should see more advertisements on vacation offerings and fewer advertisements on other topics.</p> <p>In order to do so, we evaluate your surfing behavior based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can see, edit or delete the information stored on you at any time at My Information.</p> <p>Thank you for your time, Daag.nl</p>

Page #4

I found this message:

Easy to read	0	0	0	0	0	0	0	Hard to read
Simple.	0	0	0	0	0	0	0	Complex
Clear	0	0	0	0	0	0	0	Unclear
Well organized	0	0	0	0	0	0	0	Poorly organized
Logical	0	0	0	0	0	0	0	Illogical
Concise	0	0	0	0	0	0	0	Lengthy

Please indicate to what extent you agree with the following statements, based on the previous given message:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
It is fair to reward the website for providing its content to me.	0	0	0	0	0	0	0
It is okay that the website asks for a favour in exchange for free content.	0	0	0	0	0	0	0
Providing the website, a benefit in return for its content is fair.	0	0	0	0	0	0	0

If I allow the website to evaluate my nonperson ally identifiable surfing information:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
I will see online ads that are relevant to me.	0	0	0	0	0	0	0
I will receive useful information through online ads	0	0	0	0	0	0	0
Online advertisements will be interesting to me.	0	0	0	0	0	0	0
Online advertisements will be worth paying attention to.	0	0	0	0	0	0	0

Page #5

The last part of the survey contains some questions about your demographics.

Page #6

What is your gender?

- 0 Male
- 0 Female

What is your age?

- 0 Below 15
- 0 15 – 20
- 0 21 – 25
- 0 26 – 30
- 0 31 – 35
- 0 36 – 40

- 41 – 45
- 46 – 50
- 51 – 55
- Above 55

What is your highest achieved education level:

- Primary
- Secondary
- Intermediate vocational education
- Bachelor's degree
- Master's degree
- Doctorate
- Other

Page #7

We thank you for your time spent taking this survey.

Your response has been recorded.

		week by participants	<ol style="list-style-type: none"> 1. <10 hours 2. 10 – 20 hours 3. 21-30 hours 4. 31 to 40 hours 5. >40 hours 	Ordinal
Privacy concern victim	(Malhotra, Jain, & Lagakos, The Information Overload Controversy: An Alternative Viewpoint, 1982)	This question is used to asses of the participant has ever felt privacy invasion in their past (yes or no)	<ol style="list-style-type: none"> 1. Have you ever been victim to what you felt was invasion of your privacy on the internet? 	Nominal

Appendix D – Survey online experiment

Page #1

Thank you for making some time to participate in this study!

This survey is part of my master thesis and is primarily concerned about online news sites. You will see a news site followed by some questions about that news site. The survey lasts approximately 7 minutes. All participants can participate in a raffle to win a €25 coupon for bol.com.

Points of importance:

1. Carefully read all the instructions and questions before answering. Beware that there might be some attention checks throughout the survey, anybody who carefully reads the questions will be able to spot them.
2. All information provided by the participants will be treated in strictest confidence. The results will only be published in aggregated form. Please note that participation in this survey is voluntary, so you may discontinue the survey at any time.
3. If you have any questions or comments you can contact Daan Ouwehand:
459399do@student.eur.nl.

Page #2

Do you understand the instructions?

Yes, I understand (this will continue the survey)

No, I do not understand or do not wish to participate (this will end the survey)

Page #3

Do you ever visit online news websites?

Yes

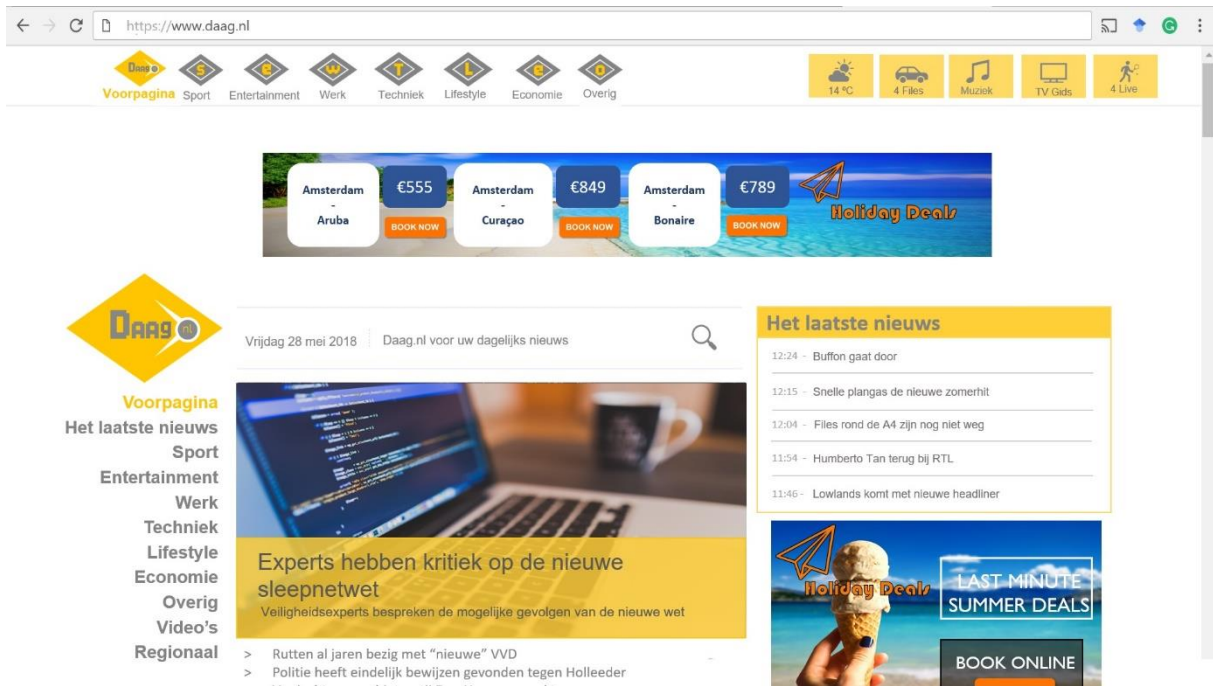
No

Page #4

Imagine that you want to read the latest news. To do so you go online to your favourite free news site Daag.nl. Click “next” to continue to Daag.nl

Page #5

Please evaluate the site properly and click “next” to continue (You may also zoom in)



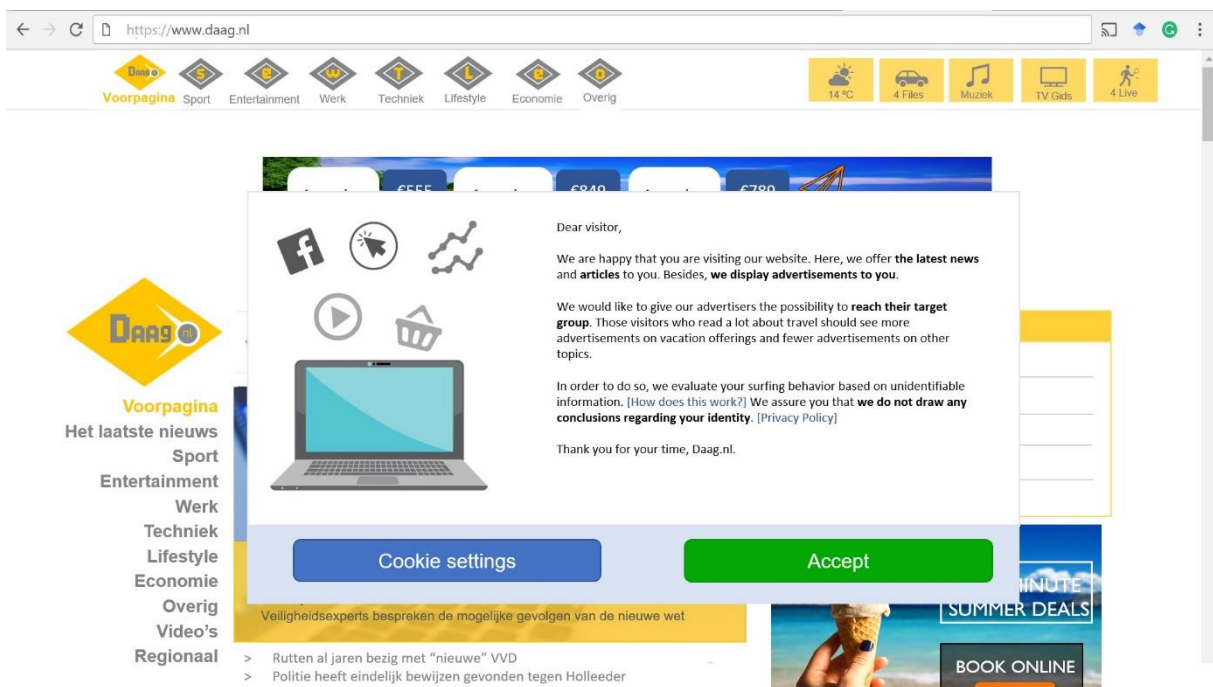
Page #6

You want to read an article but before you are directed to this article a message pops-up. On the next page you will see the message. Please read the message carefully before continuing the survey (you may also zoom in).

Page #7

(All three scenarios)

(neutral)



(Relevance)

The screenshot shows the Daag.nl website with a cookie consent dialog box. The dialog box contains the following text:

Dear visitor,

We are happy that you are visiting our website. Here, we offer **the latest news and articles** to you. Besides, **we display advertisements to you**.

We would like you to view **advertisements you are interested in**. For example, if you read a lot about travel, you will see more advertisements on vacations offerings and fewer advertisements on other topics.

In order to do so, we evaluate your surfing behavior based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can **see, edit or delete the information stored on you** at any time at My Information.

Thank you for your time, Daag.nl.

Buttons: Cookie settings, Accept

Background text: Veiligheidsexperts bespreken de mogelijke gevolgen van de nieuwe wet

Navigation menu: Voorpagina, Sport, Entertainment, Werk, Techniek, Lifestyle, Economie, Overig

Weather: 14 °C, 4 Files, Muziek, TV Gids, 4 Live

Left sidebar: Voorpagina, Het laatste nieuws, Sport, Entertainment, Werk, Techniek, Lifestyle, Economie, Overig, Video's, Regionaal

Bottom news items: > Rutten al jaren bezig met "nieuwe" VVD, > Politie heeft eindelijk bewijzen gevonden tegen Holleeder

(Reciprocity)

The screenshot shows the Daag.nl website with a cookie consent dialog box. The dialog box contains the following text:

Dear visitor,

We are happy to offer you the **latest news and articles for free**. That is possible because we **show you advertisements** in exchange. Only this way can we keep our offering free of charge.

We would like to give our advertisers the possibility to **reach their target group**. Those visitors who read a lot about travel should see more advertisements on vacation offerings and fewer advertisements on other topics.

In order to do so, we evaluate your surfing behavior based on unidentifiable information. We do not draw any conclusions regarding your identity. [How does this work?] [Privacy Policy]. You can **see, edit or delete the information stored on you** at any time at My Information.

Thank you for your time, Daag.nl.

Buttons: Cookie settings, Accept

Background text: Veiligheidsexperts bespreken de mogelijke gevolgen van de nieuwe wet

Navigation menu: Voorpagina, Sport, Entertainment, Werk, Techniek, Lifestyle, Economie, Overig

Weather: 14 °C, 4 Files, Muziek, TV Gids, 4 Live

Left sidebar: Voorpagina, Het laatste nieuws, Sport, Entertainment, Werk, Techniek, Lifestyle, Economie, Overig, Video's, Regionaal

Bottom news items: > Rutten al jaren bezig met "nieuwe" VVD, > Politie heeft eindelijk bewijzen gevonden tegen Holleeder

Page #8

In the next part of the survey you will answer some questions about the message you just read.

Page #9

Given this hypothetical scenario:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
I would probably allow the website to evaluate my surfing behaviour.	0	0	0	0	0	0	0
It is likely that I would consent to an analysis of my surfing behaviour.	0	0	0	0	0	0	0
I would be willing to agree to an evaluation of my surfing behaviour.	0	0	0	0	0	0	0

Page #10

Please indicate to what extent you agree with the following statements, based on the previous hypothetical scenario:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
It bothers me that the firm can track information about me.	0	0	0	0	0	0	0
I am concerned that the firm has too much information about me.	0	0	0	0	0	0	0
It bothers me that the firm can access information about me.	0	0	0	0	0	0	0
I am concerned that my information could be used in ways I could not foresee.	0	0	0	0	0	0	0

Please indicate to what extent you agree with the following statements, based on the previous hypothetical scenario:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
It is fair to reward the website for providing its content to me.	0	0	0	0	0	0	0
It is okay that the website asks for a favour in exchange for free content.	0	0	0	0	0	0	0
Providing the website, a benefit in return for its content is fair.	0	0	0	0	0	0	0

Please indicate to what extent you agree with the following statements:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
Overall, I consider advertising a good thing	0	0	0	0	0	0	0
My general opinion of advertising is favourable.	0	0	0	0	0	0	0
Overall, I like advertising.	0	0	0	0	0	0	0

Page #11

The last part of the survey contains some questions about the experiment and some questions about your demographics.

Page #12

Please indicate to what extent you agree with the following statements:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
The described situation was realistic.	0	0	0	0	0	0	0
I could imagine myself in the described situation.	0	0	0	0	0	0	0

How many hours do you spend surfing the internet per week?

- <10 hours
- 10 – 20 hours
- 21-30 hours
- 31 to 40 hours
- >40 hours

Have you ever been victim to what you felt was invasion of your privacy on the internet?

- Yes
- No

Page #13

What is your gender?

- Male
- Female

What is your age?

- Below 15
- 15 – 20
- 21 – 25
- 26 – 30
- 31 – 35
- 36 – 40
- 41 – 45
- 46 – 50
- 51 – 55
- Above 55

What is your highest achieved education level:

- Primary
- Secondary
- Intermediate vocational education
- Bachelor's degree
- Master's degree
- Doctorate

0 Other

Page #14

If you want to enrol in the raffle for a Bol.com coupon, please fill in your e-mail address:

.....

Page #15

We thank you for your time spent taking this survey.

Your response has been recorded.

Appendix E – Main survey results

Appendix E1 Demographics

Appendix E1.1 – Demographics of participants Gender

Gender	Frequency	Percentage	Cumulative Percent
Male	180	54.2%	56.6%
Female	138	41.6%	100%
Missing	14	4.2%	-
Total	332	100%	-

Appendix E1.2 – Demographics of participants Age

Age	Frequency	Percentage	Cumulative Percent
15-20	28	8.4%	8.5%
21-25	159	47.9%	56.8%
26-30	66	19.9%	76.9%
31-35	9	2.7%	79.6%
36-40	3	0.9%	80.5%
41-45	7	2.1%	82.7%
46-50	5	1.5%	84.2%
51 – 55	12	3.6%	87.8%
Above 55	40	12.2%	100%
Missing	3	0.9%	-
Total	332	100%	-

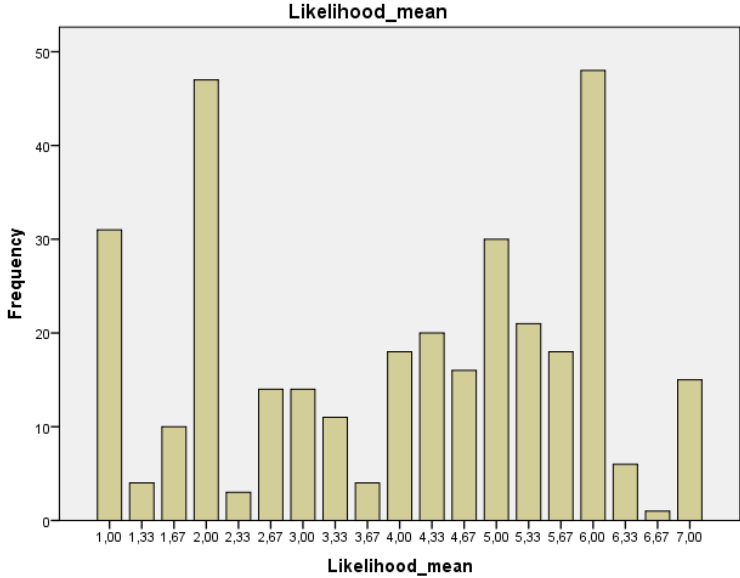
Appendix E1.2 – Demographics of participants education

Education	Frequency	Percentage	Cumulative Percent
Primary school	1	0.3%	0.3%
Secondary school	26	7.8%	8.2%
Intermediate vocational education	36	10.8%	19.1%
Bachelor's degree	190	57.2%	76.7%
Master's degree	68	20.5%	97.3%
Doctorate	8	2.4%	99.7%
Other	1	0.3%	100%
Missing	2	0.6%	-
Total	332	100%	-

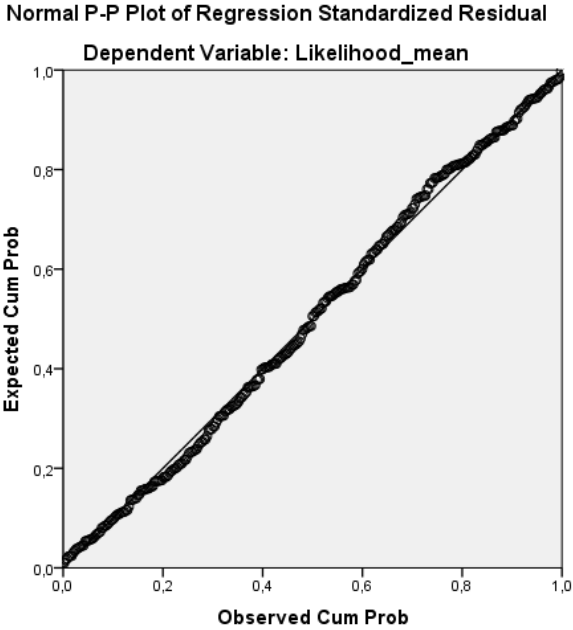
Appendix E2 – Factor and cross loadings

	Component			
	1	2	3	4
1. Privacy	.873	-.146	-.060	-.058
2. Privacy	.814	-.065	-.101	.007
3. Privacy	.812	-.253	-.095	-.209
4. Privacy	.788	-.289	-.164	-.184
1. Likelihood accepting OBA	-.189	.906	.157	.131
2. Likelihood accepting OBA	-.181	.898	.145	.140
3. Likelihood accepting OBA	-.252	.856	.134	.169
1. Attitude towards advertising	-.113	.121	.932	.110
2. Attitude towards advertising	-.126	.185	.853	-.045
3. Attitude towards advertising	-.100	.096	.843	.234
1. Need for distributive justice	-.073	.101	.035	.891
2. Need for distributive justice	-.063	.100	.139	.882
3. Need for distributive justice	-.283	.357	.134	.598

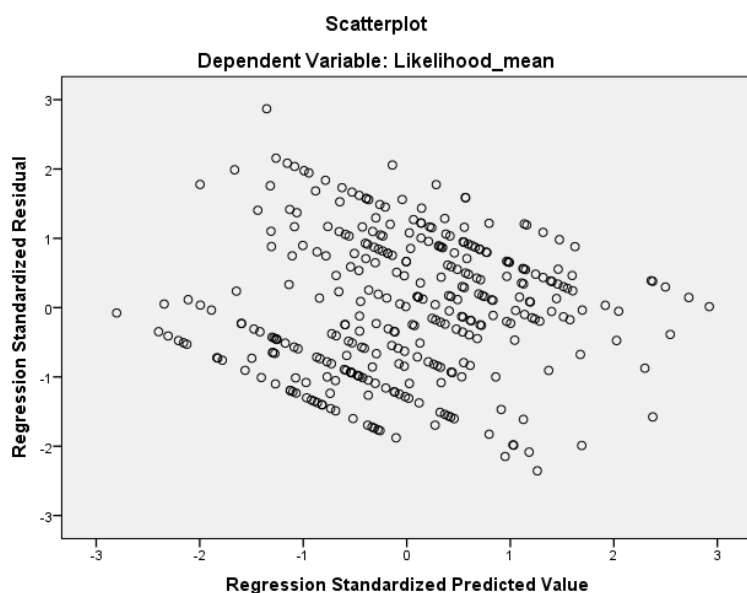
Appendix E3.1 – Likelihood mean frequency graph



Appendix E3.2 – P-P plot of regression



Appendix E3.3 – Scatterplot of regression standardize residual X regression standardized predicted value



Appendix E3.5 – Model comparison with Hayes adjusted standard errors

	Normal model				Hayes Adjusted model			
	Unstandardized Coefficients		T	Sig.	Unstandardized Coefficients		T	Sig.
	B	Std. Error			B	Std. Error		
Constant	3.993	.145	27.601	.000	3.9933	.1525	26.18	.000
Reciprocity appeal	.068	.209	.326	.745	.068	.218	.312	.755
Relevance appeal	-.002	.208	-.010	.992	-.002	.217	-.0095	.992
Attitude	.413	.132	3.125	.002	.413	.155	2.664	.008
Privacy concerns	-.396	.121	-3.261	.001	-.396	.140	-2.832	.005
Distributive justice	.311	.121	2.574	.011	.311	.128	2.426	.016
Reciprocity *	-.043	.173	-.247	.805	-.043	.184	-.233	.817
Privacy								
Reciprocity *	-.022	.176	-.128	.899	-.023	.189	-.119	.905
Distributive								
Reciprocity *	-.210	.174	-1.209	.227	-.210	.198	-1.063	.289
Attitude								
Relevance *	-.107	.172	-.624	.533	-.107	.189	-.566	.572
Privacy								
Relevance *	-.241	.178	-1.353	.177	-.241	.211	-1.145	.253
Attitude								

Appendix E3.6 – Model summary of regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	.346	.120	.111	1.71772	n/a
2	.557	.310	.299	1.52553	n/a
3	.562	.316	.292	1.533324	n/a
4	.729	.531	.477	1.31738	2.003

Appendix E4 – demographic characteristics and attitude towards advertising

Appendix E4.1 – Demographics of participants gender on attitude towards advertising

Gender	Frequency	Mean
Male	180	4.02
Female	138	3.81

Appendix E4.2 – Demographics of participants age on attitude towards advertising

Age	Frequency	Mean
15-20	28	4.06
21-25	159	4.04
26-30	66	3.80
31-35	9	4.74
36-40	3	4.78
41-45	7	4.86
46-50	5	4.40
51 – 55	12	3.74
Above 55	40	2.94

Appendix E4.3 – Demographics of participants education on attitude towards advertising

Education	Frequency	Mean
Primary school	1	4.00
Secondary school	26	3.95
Intermediate vocational education	36	4.01
Bachelor's degree	190	3.91
Master's degree	68	3.84
Doctorate	8	3.04
Other	1	5.00

Appendix E5 – Johnson-Nyman significance region output

Value	% below	% above				
3.2704	28.7	71.29				
Attitude	Effect	SE	t	p	LLCI	ULC
1.0000	.8679	.3999	2.1700	.0308	.0809	1.6549
.0814	.8020	.3662	2.1901	1.3000	.0293	1.5226
1.6000	.7361	.3333	2.2085	.0280	.0802	1.3920
1.9000	.6703	.3016	2.2224	.0270	.0768	1.2637
2.2000	.6044	.2714	2.2268	.0267	.0703	1.1385
2.5000	.5385	.2434	2.2127	.0277	.0596	1.0174
2.8000	.4727	.2183	2.1653	.0311	.0431	.9022
3.1000	.4068	.1973	2.0619	.0401	.0186	.7950
3.2704	.3694	.1877	1.9678	.0500	.0000	.7387
3.4000	.3409	.1818	1.8754	.0617	-.0168	.6986
3.7000	.2750	.1733	1.5873	.1135	-.0659	.6160
4.3000	.1433	.1804	.7944	.4276	-.2117	.4983
4.6000	.0774	.1952	.3968	.6918	-.3066	.4615
4.9000	.0116	.2156	.0537	.9572	-.4127	.4358
5.2000	-.0543	.2403	-.2260	.8214	-.5271	.4185
5.5000	-.1202	.2680	-.4483	.6542	-.6476	.4072
5.8000	-.1860	.2980	-.6243	.5329	-.7724	.4003
6.1000	-.2519	.3295	-.7644	.4452	-.9004	.3966
6.4000	-.3178	.3623	-.8771	.3811	-1.0307	.3952
6.7000	-.3836	.3959	-.9689	.3334	-1.1628	.3955
7.0000	-.4495	.4303	-1.0446	.2970	-1.2962	.3972