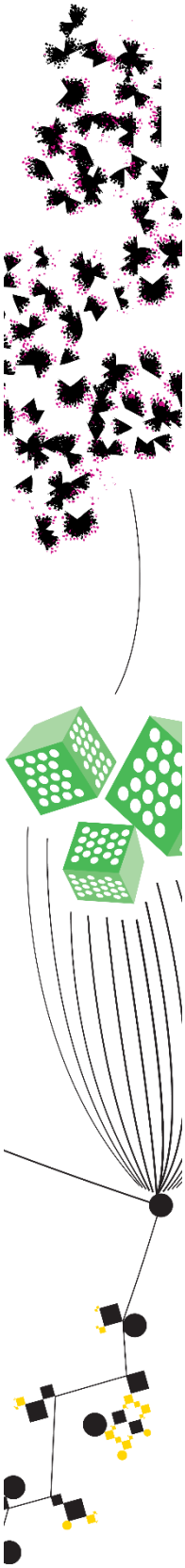
ONLINE BEHAVIORAL ADVERTISING: WHY AND HOW ONLINE CUSTOMERS RESPOND TO IT?

An experimental study into the effects of personalized levels, rewards on click-through intentions towards ads between Chinese and Dutch



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Abstract

Purpose: With the emergence and development of new technologies, the so-called online behavioral advertising (OBA) is being used to collect information of customers and then to deliver highly personalized ads to them. However, it remains unclear how customers from different culture backgrounds can react to different levels of personalized ads when given rewards (e.g., discounts or coupons) in the ad. Therefore, the main purpose of this study is to examine how both the level of personalization and rewards influence click-through intentions towards ads in different cultures. Furthermore, the mediation effects of perceived benefits, perceived risks, and perceived intrusiveness are discussed.

Method: A 2 (level of personalization: high vs. no) by 2 (rewards: yes vs. no) between subjects experiment in a cross-culture (Chinese vs. Dutch) setting was formulated. For the study, a total of 129 respondents (65 Dutch and 64 Chinese) participated via an online survey.

Results: The MANOVA analysis showed a significant effect of personalized levels on perceived benefits and click-through intentions towards ads. Moreover, the mediation effect of perceived benefits was proved. However, the analysis showed no significant effects of personalized levels on perceived risks and perceived intrusiveness. Also, no mediation effects of perceived risks and perceived intrusiveness were found. Besides, two-way interaction effects were not found for personalized levels and rewards, rewards and cultural differences on click-through intentions. Last, two-way interaction effects were also not found for personalized levels and cultural differences on perceived risks, perceived intrusiveness, and click-through intentions.

Conclusions: The findings of the study suggest that a high level of personalization leads to higher perceived benefits and higher click-through intentions towards ads than non-personalized level. Also, perceived benefits by online customers can mediate the effect between personalized levels and click-through intentions. Therefore, marketers and academics should pay attention to the benefits of the ad that are presented to online customers to optimize OBA effectiveness.

Keywords: online behavioral advertising (OBA), level of personalization, perceived benefits, perceived risks, perceived intrusiveness, rewards, cultural differences

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1. Introduction

Nowadays, due to the rapid development of the internet, marketers are more inclined to adopt new techniques to target advertising more precisely, to improve their sales performance and to better satisfy the needs of consumers (Lee, Cheng, & Shih, 2017). One of these techniques is named 'personalized advertising or Online Behavioral Advertising (OBA)'. OBA is defined as the practice of monitoring online behaviors of customers and disseminating specialized advertisements back to these customers based on the collected information (Boerman, Kruikemeier, & Zuiderveen Borgesius, 2017). Boerman et al., (2017) also pointed that these collected data could be from websites that the customers have visited, articles that they have read, and videos that they have watched, or potentially anything they have looked for based on a search engine. All of these data help advertisers to improve the effectiveness of online advertising, reach more targeted consumers and raise the revenue, by proposing more personalized messages (Goldfarb & Tucker, 2011).

According to the media agency Magna, lots of social media applications, websites and companies, e.g., YouTube, Facebook, and Amazon, have already been implementing OBA, in order to maximize the Return On Investment (ROI) (Gironda & Korgaonkar, 2018). However, as mentioned above, the OBA involves collecting, using and sharing personal data. Therefore, much attention regarding the benefits and risks of personalized advertisements has been paid with the continuous innovation and development of OBA (Malhotra, Kim, & Agarwal, 2004).

Ur, et al. (2012) explained that some online users could benefit from OBA. First, it leads users to the preferred merchandise via relevant advertisements. Second, it can provide them a better online shopping experience by providing them customized promotions. Therefore, these customers agree that OBA is informative and useful, and they are more willing to accept and click on advertisements (Lambrecht & Tucker, 2013). However, every coin has two sides, OBA being no exception. It also brings downsides or risks to online users (Ur et al., 2012). Most of them expressed concerns about the privacy of their personal information. They stated that going online may risk their privacy because companies may track and save their online behavior (Fortes, Rita, & Pagani, 2017). In addition, they also felt that their personal information was illegally misused by these companies (He Li, Wu, Gao, & Shi, 2016). In addition to privacy concerns, online consumers regard the OBA also as disturbance and annoyance due to the perception of intrusion into their normal information processing (Tucker, 2014). Therefore, when online users perceive the OBA as intrusiveness, they are more likely to evade advertisements. In other words, the intention for them to click on ads is low (Rejón-guardia & Martínez-lópez, 2014).

Besides, previous studies suggest that different levels of personalization also influence click-through rates and intentions (Boerman et al., 2017). Aguirre et al. (2015) point out that a

higher personalization leads to higher customer adoption and a greater click-through intention. Bleier (2015) stated that advertisements with a high personalization enhance advertising effectiveness when customers visit online stores. What's more, researchers stated that the level of personalization influences not only OBA outcomes (for example, click-through intention) but also customer-related factors (such as perceived benefits, perceived risks, and perceived intrusiveness) (Boerman et al., 2017). Online users receive useful and helpful ads related to their interests when these ads are highly personalized (Jin, Campbell, & Kwak, 2012). However, Van Doorn & Hoekstra (2013) found that a higher degree of personalization increases feelings of intrusiveness by online customers. The lab experiments conducted by Bleier (2015) illustrated that higher personalized ads might trigger higher privacy concerns of online customers, leading to a higher perception of loss of privacy and misuse of personal information (Sheng, 2007). Meanwhile, studies emphasize that online customers, who are aware of higher rewards (such as extra discount coupons or bonus points) of the ads, sacrifice and trade their personal information, leading to a higher intention to click ads (Hann, Lee, & Lee, 2002; Shibchurn & Yan, 2014).

Even though previous studies have investigated the relationship between the level of personalization and click-through intentions, there is still a limited number of studies examining the factors from perspectives of cross-culture and rewards (Boerman et al., 2017). Due to the globalization of the economy and markets, a growing number of customers from diverse cultural backgrounds have easy access to the same brand and merchandise (Moon, Chadee, & Tikoo, 2008). However, consumers from different cultures have different attitudes and cultural values. According to Hofstede (2011), western countries tend to be individualistic, while eastern countries tend to be collectivistic. For example, the Netherlands (with an individualist index score of 80) is a more individualistic society than China (with an individualist index scored of 20). Thus, we aim to use the Netherlands and China as representatives of a western country and an eastern country. A cultural difference in the individualist/collectivist dimension suggests that online customers from individualist cultures are more self-centered than those from collectivist cultures (Hofstede, 2011). In addition, people from individualist cultures tend to keep their personal information secure and are more likely to avoid risks and intrusiveness than those from collectivist cultures (Trepte et al., 2017). what's more, studies found that rewards have positive effects on click-through intentions. However, there still little studies about the effect in different levels of personalization (Shibchurn & Yan, 2014). Thus, through this study, people can better understand online customers' click-through intentions, in terms of cultural differences and rewards in different levels of personalization (Hill, 2017).

In addition, the mediation effects of perceived benefits, perceived risks, and perceived intrusiveness still need to be further studied to deep understand the relationship between the level of personalization and click-through intentions. Therefore, the research questions of this

study are as follows:

RQ1*-To what extent do the level of personalization and rewards influence online consumers' click-through intentions in both individualistic culture and collectivistic culture when exposed to OBA?*

RQ2*-To what extent do perceived benefits, perceived risks, and perceived intrusiveness mediate the relationship between level of personalization and click-through intentions towards ads?*

In summary, this study has both theoretical and practical implications. Previous studies provided proofs for direct effects of different levels of personalization on click-through intentions towards ads. However, a better overview of mediation (perceived benefits, perceived risks, and perceived intrusiveness) effects and moderation (cultural differences and rewards) effects between the level of personalization and click-through intentions are still needed. More importantly, academic research between the level of personalization and click-through intentions in perspectives of cross-culture and rewards provided a brand-new angle to deep understand the relationship between personalization and click-through intentions. In addition, through the research, advertisers, especially international companies, can know how cultural differences affect click-through intention to online customers when they experience OBA. Moreover, the study of personalized levels and rewards help advertisers to target more accurate pool of online consumers and to increase ad effectiveness.

2. Theoretical Framework

2.1 Online behavioral advertising (OBA)

In the era of the current digitalized world, internet advertising has been increasingly tailored to individual customers, which is called Online Behavioral Advertising (OBA) (Ur et al., 2012). The definition of OBA has two important features. First, it monitors or tracks the online behavior of customers, which can include web browsing data, searching and watching histories, app use data, purchasing behavior, and what people write in e-mails or post on social networking sites (Borgesius, 2015). Second, it uses the collected data to target ads individually. From a technical perspective, organizations often use cookies and device fingerprints to track browsing behaviors of online customers, which allows them to collect detailed information about consumers (Altaweel, Good, 2015). For instance, if online consumers searched several websites about cars, the network assume that they should be interested in cars. Afterward, it will display ads about cars only to those who have searched for information about cars (Boerman et al., 2017).

Because OBA delivers individually customized advertisements to online users according to their instant or prior web-browsing behavior (Lambrecht & Tucker, 2013). Therefore, marketers regard OBA strategy as an effective way to increase their ROI. In addition, researchers state that OBA increases click-through rates and intentions considerably when comparing with non-personalized ads (Yan et al., 2009).

However, another important fact of OBA is that tracking of online activities and collecting details data usage of consumers often happen covertly (Boerman et al., 2017). Thus, the exact mechanics of how OBA works can be considered as a trade secret(Ur et al., 2012). In addition, the covertness may be harmful, as online consumers are unaware of the mechanism of OBA and it may potentially increase their privacy concerns (Ur et al., 2012; Boerman et al., 2017).

In general, online consumers receive more relevant ads if their personal information and behaviors are accurately profiled. However, OBA, as one of the hottest issues in the age of information, has been facing disputes.

2.2 Level of personalization

Researchers found that click-through rates and intentions of ads are affected by the level of personalization (Boerman et al., 2017). Previous studies compared various levels of personalization by combining one or more types of information (age, gender, online shopping behavior, and search history). Their findings suggested that highly personalized advertising is generally more effective than non-personalized advertising in terms of being more memorable, more likable, and sparking the change of intentions and behaviors (Liang, 2018). Moreover, the

study conducted by Freya and De Keyzer (2015) on Facebook showed that perceived levels of personalization of online customers positively influence their click-through intentions towards ads. They also found that consumer responses (such as click-through rates and intentions towards the ad) can be improved by perceived degrees of personalization. In other words, a higher degree of personalization leads to higher click-through intentions towards the ad.

Online customers generally perceive highly personalized ads as more relevant to their interests and more informative than non-personalized ads (Bleier, 2015). The study conducted by Bleier (2015) also suggested that high personalized advertisement enhances online users' perceived informativeness because they can benefit more from high personalized ad by receiving information relevant to their interests without going through loads of irrelevant information, therefore, the hypotheses are as follows:

Hypothesis 1a. *Click-through intentions towards ads are higher when the ad is more highly personalized than non-personalized.*

Hypothesis 1b. *Perceived benefits are higher when the ad is more highly personalized than non-personalized.*

Meanwhile, Doorn & Hoekstra (2013) implied that a higher level of personalization leads to not only higher click-through intentions but higher perceived intrusiveness levels. They stated that a higher level of personalization means higher relevance of interests for the ad by online users. At the same time, more personal information about online customers is used, which results in their feel of intrusiveness. As a result, the feel of intrusiveness prevents online consumers from taking notice of the ad contents (Doorn & Hoekstra, 2013). In addition, prior studies also showed that high personalized services and ads have significant privacy implications since a large number of personal data is collected for performing personalization (Xu, Robert, Carroll, & Beth, 2011). According to the study of Xu et al. (2011), perception of risks, such as privacy concerns of online customers, raised when they were presented with a highly personalized shopping list that was derived from their previous purchasing history. In other words, different levels of personalization influence privacy concerns or perceived risks of online users differently. Therefore, hypothesizes can be formulated:

Hypothesis1c. *Perceived risks are higher when the ad is more highly personalized than non-personalized.*

Hypothesis1d. *Perceived intrusiveness is higher when the ad is more highly personalized than non-personalized.*

2.3 Rewards

As discussed, personalization also raises privacy concerns. Thus, higher personalized ads lead to higher privacy concerns. To be more specific, online customers care more about their

personal information regarding highly personalized ads than non-personalized ads (Sheng, 2007). However, it is also recognized that online customers are often enticed into making compromising transactions with their personal information (Jin, Campbell, & Kwak, 2012). They are willing to give up some personal information in exchange for coupons, discounts, and gratifications (White, 2004). Higher rewards (for example, coupons and discounts) make online customers give up more personal information, such as name, cellphone number and home address (Jin et al., 2012). Therefore, higher rewards perceived by online customers overweigh perceived risks, which increases their intention to adopt and click the ads (Sheng, 2007). Researchers also found that even though with the existence of high personalized ads, online customers would still be willing to click the ads if the rewards overweigh privacy concerns (En, Hock-Hai, 2006).

In a cross-cultural study, Hofstede (2011) stated that people from individualist cultures are more sensitive about their personal information than those from individualist cultures. Hence people from individualist cultures are more inclined to avoid potential risks and are not likely to trade their personal information to grant coupons and discounts when visiting online stores (Zhang, Liang, & Sun, 2013).In other words, it decreases their intentions to click ads even when rewards are presented. Therefore, in the cross-cultural setting, the paper proposes that:

Hypothesis 2a *Online customers have a higher intention to click the ad when rewards are presented than not presented.*

Hypothesis 2b. *Online customers who exposed to a highly personalized ad have a higher intention to click the ad when rewards are presented than not presented.*

Hypothesis 2c. *Online customers in collectivist culture have a higher intention to click the ad than those in individualist culture when rewards are presented.*

2.4 Perceived benefits

As mentioned above, researchers stated that online consumers do not mind revealing their personal information to a third-party if they receive specific benefits for providing useful information (Youn, 2005). They want to receive personalized messages or individualized attention from marketers or organizations when they have the perception of the positive consequences (save time or money) that are caused by online behavioral advertising (Jahangir & Begum, 2008). Therefore, the perceived benefits of OBA by online customers lead to a higher advertisement adoption rate. And it also increases their click-through intentions (Kerem & Ulla, 2018).

According to previous studies, one of the benefits of OBA is that it can narrow alternative solutions down to the most relevant and helpful information (Kerem & Ulla, 2018). Therefore, online customers perceived OBA as informative. Informativeness refers to an amount of useful

and helpful information provided by the advertisement (Ducoffe, 1995). In addition, perceived informativeness is defined as the beliefs of online customers in the existence of a positive use-performance relationship (Davis, 2019). Perceived informativeness has already been found to be an important antecedent to intentions (Purnawirawan, Pelsmacker, & Dens, 2012). It can increase the favorability of an ad if a consumer finds it helpful and useful. Therefore, the ability of ads to provide sufficient, useful and interesting information on products and services (i.e., informativeness) increases the intrinsic motivation of online users to click on ads (Ozcelik & Varnali, 2019).

In addition, according to the definition of OBA, if the information and interests of online users have been accurately profiled, they will receive more relevant and highly personalized advertising (Ur et al., 2012). Online customers might regard it as useful and interesting because it is the exact brand or product they want to know or buy. Furthermore, they are more likely to click the ad because they have a motivation to get the information. Therefore, the hypothesis can be formulated as follows:

Hypothesis 3. *Perceived benefits by online users mediate the effect of level of personalization on click- through intentions towards ads.*

2.5 Perceived risks

Perception of risk refers to online consumers' assessment of the likelihood of negative occurrences when they exposed to OBA (Paek & Hove, 2017). Online users regard it as a potential risk to their personal information. They might be turned away by their perceived risks when receiving high personalized advertising (Chen, 2017). For example, their perception of personal information loss or information misuse, such as name, address, phone number, gender, birth date and photos (Fortes et al., 2017). Alraja & Mohammed (2015) also proposed that the information misuse risk may occur when consumers suffer a loss of personal information during OBA. Moreover, in an online environment, Barki (2007) found out that a high level of perceived risks reduces the effectiveness of advertisements. According to Boerman et al. (2017), the intention to click on the advertisement plays an important role in measuring the effectiveness of the ad. Therefore, perceived risk is an important factor, which can affect click-through intentions of online users.

2.5.1 Privacy concerns

According to Sheng (2007), privacy concerns by online users refer to their subjective views of fairness within the context of privacy. Privacy concerns of online customers arise from the feeling that their information is vulnerable and that they are not able to control their personal information (Dinev & Hart, 2004). Therefore, privacy is an important social issue affecting all

individuals (Y. Li, 2014). In the online environment, research has focused on online information privacy from the perspective of consumers due to the impact of the Internet and the web on consumer information privacy. In addition, privacy concerns of online customers have already been proved to affect their intention to click on online advertising on social media (Tucker, 2014). The development of social media and new techniques make online users care more about their personal information.

Previous studies have already discussed privacy concerns to a great extent (Fortes et al., 2017). Malhotra et al., (2004) stated that privacy concerns of online customers can be measured by three dimensions, namely, collection, control, and awareness. First, collection can be defined as the level of concern by online customers regarding the amount of their personal information or data owned by others. Second, control is defined as the ability of online consumers to be heard on how personal data are used and how it can be accessed, modified and deleted. Last, awareness is reflected in the recognition of online customers' degree of information taken by marketers and organizations to do privacy practices. In addition, online users' perception of privacy issues has been found to affect their intention to click ads on a social network website (Fortes et al., 2017). Therefore, it can be hypothesized that:

Hypothesis 4. *Perceived risks by online users mediate the effect of level of personalization on click- through intentions towards ads.*

2.6 Perceived intrusiveness

Apart from perceived benefits and risks, online consumers regard high personalized ads as disturbing and annoying due to the perception of intrusion into their normal information processing. Perceived intrusiveness is a mechanism, based on which the ad causes annoyance and triggers emotional reactions in the online consumer, possibly driving the consumer to advertising evasion (Edwards et al., 2002). Therefore, intrusiveness is considered as a behavior, act, state or disposition towards being intrusive, interrupting and disturbing to others (Ha, 1996). Several studies have already investigated the concept of intrusiveness in digital marketing. For example, previous researchers define the intrusiveness of online ads as a perception or psychological consequence that occurs when the cognitive processes of online customers are interrupted (Edwards, Li, & Lee, 2002). In addition, the ads must be perceived as interrupting the goals of the online customers to be regarded as intrusive. They also provide seven scales to measure the intrusiveness: distracting, disturbing, forced, interfering, intrusive, invasive, and obtrusive (Hairong Li, Edwards, & Lee, 2002).

In addition, Mccann (2014) also pointed out that the intrusiveness of online advertising can be explained from both interruption and information overload perspectives. Interruption can be conceptualized by "the degree of task interference of the advertising presence with task

performance of online users", while information overload is defined as "the number of ads that exceed the information processing capacity of the online consumer" (Mccann, 2014; Liang, 2018). Also, perceived intrusiveness may be heightened when an individual has little time to accomplish a task on a website. Therefore, online customers are more likely to evade the personalized advertisements when the ads are perceived as intrusive (Rejón-guardia & Martínez-lópez, 2014). As a result, the click-through intentions are influenced.

Perception of intrusiveness can also result in a negative emotional reaction to online advertising (Rejón-guardia & Martínez-lópez, 2014). For example, the intrusive may emerge if online consumers have to close an ad to continue viewing the content of the website (Edwards et al., 2002). In addition, feelings of intrusiveness interferes cognitive processing of online customers and interrupts their goal pursuit, which leads to lower click-through rates and intentions (Van Doorn & Hoekstra, 2013). Therefore, it can be hypothesized that:

Hypothesis 5. *Perceived intrusiveness by online users mediates the effect of level of personalization on click- through intentions towards ads.*

2.7 Cultural differences

Although there are many studies regarding online behavioral advertising, the relationship among level of personalization, perceived benefits, perceived risks, perceived intrusiveness and click-through intentions towards ads in a cross-culture or cross-country setting have rarely been studied (Jeon & Beatty, 2002). Therefore, with the rapid development of international marketing, much attention should be paid in a cross-cultural perspective regarding online behavioral advertising. In addition, understanding cultural difference is often considered as an important factor in successful international marketing communication (Y. Zhang & Neelankavil, 1997).

Hofstede (2011) defined cultural differences as the collective programming of the mind and behaviors that distinguish members of one group or category of people from others. Online customers who grow up in a particular culture become accustomed to that culture's value systems, beliefs, and perception processes. For example, people from western countries are motivated by their self-interest. People from eastern countries, however, put their emphases on sharing (Y. Zhang & Neelankavil, 1997). Culture is a complex and multifaceted construct and it is difficult to compare the entire culture. However, it is possible to observe and compare the particular cultural difference. One of the most basic dimensions is individualist culture and collectivist culture (Hofstede, 2011). Hofstede (2011) pointed out that the concept of individualist and collectivist is the degree to which people in a society are integrated into groups. In the individualist society, people prefer to take care of themselves prior to maintaining a relationship of members in the society. By contrast, in the collectivist society, people rely on

a tight social framework and expect others to look after them (Hofstede, 2011). In addition, in Hofstede individualist Index, individualist tends to prevail in Western countries, while collectivist prevails in Eastern countries (Hofstede, 2011).

Empirical studies suggest that perceived risks by online customers are bound to cultural norms and values and it seems to show the striking cultural differences (Trepte et al., 2017). In addition, Moon et al. (2008) reported that online customers from different cultures have different levels of perceived privacy risks to personalized ads. Therefore, perceived risks need to be further studied in the context of different cultures (Trepte et al., 2017). Previous studies stated that more than 35% of Asians never managed their online privacy settings. However, only less than 20% of Americans didn't manage their online privacy settings (Hargittai & Litt, 2013). In addition, American customers are more likely to engage in privacy-securing behaviors such as disguising their identities (Trepte et al., 2017).

Highly personalization requires online customers to give up more personal information, which raises higher perceived risks (Sheng, 2007). In addition, online customers from individualist cultures care more about themselves and they are more inclined to avoid risks than those from collectivist cultures (Trepte et al., 2017). Therefore, in the cross-culture setting, the paper proposes that:

Hypothesis6a. *Perceived risks are higher in individualist culture than in collectivist culture when ads are highly personalized.*

Moreover, Van Doorn & Hoekstra (2013) found that ads with greater and higher personalization increases feelings of intrusiveness, which negatively affect click-through intentions of online customers. In addition, higher feelings of intrusiveness by online customers lead to a higher perception of invasive of their personal space (Van Doorn & Hoekstra, 2013). Moreover, according to Hofstede (2011), customers from individualist culture care more about themselves than those from collectivist culture and they are more inclined to avoid intrusiveness caused by others. Therefore, in the cross-culture setting, the paper proposes that:

Hypothesis 6b. *Perceived intrusiveness is higher in individualist culture than in collectivist culture when ads are highly personalized.*

Furthermore, people from individualist cultures are closely related to self-enhancement. Moreover, they are motivated by self-interest and the achievement of personal goals (Zhang & Neelankavil, 1997). However, in collectivist cultures, personal interest and goals are subordinated to the goals of the group (Trepte et al., 2017). As discussed, highly personalized ads are more relevant to the interests of online users. Hence highly personalized advertising is more attractive among individualist culture and they are more likely to click the ad. Therefore, in the cross-culture setting, the paper proposes that:

Hypothesis 6c. *Click through intentions towards ads are higher in individualist culture than in collectivist culture when ads are highly personalized.*

2.8 Research model

Based on the theoretical framework, the research model of this paper is developed to investigate the effects of different personalized levels on click-through intentions towards ads by online customers. The **independent variable** is the level of personalization. The **moderation variables** are cultural differences and rewards. At the same time, the variable of rewards has a main effect on click-through intention towards ads. Last, perceived benefits, perceived risks, and perceived intrusiveness are **mediation variables**, affecting the effects between personalized levels and click-through intentions towards ads. Figure 1 shows the research model.

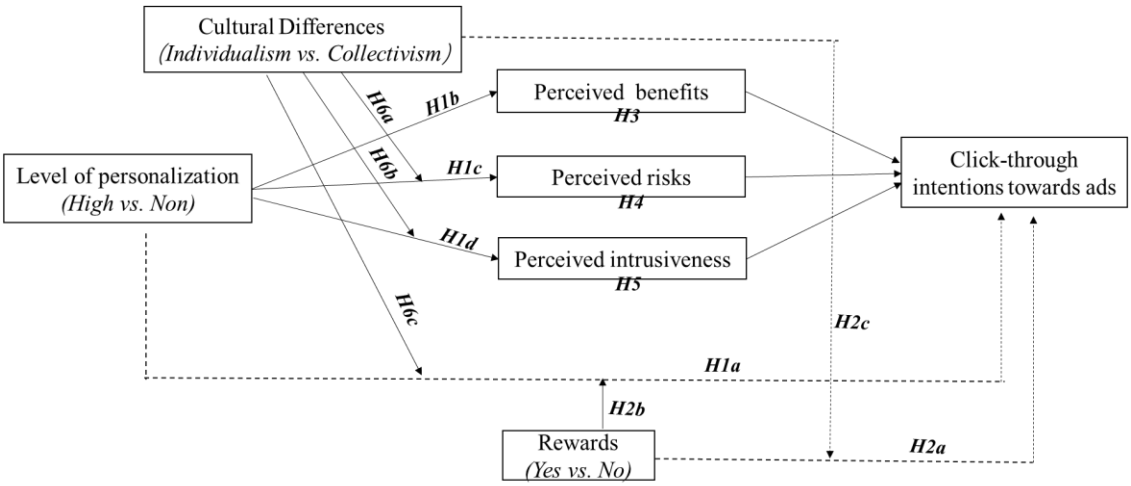

Figure1: Research model.

3. Methodology

3.1 Research design

In this section, a scenario-based 2 (level of personalization: high vs.no) x 2 (rewards: with rewards vs. without rewards) between-subjects factorial experimental design between Chinese (collectivist culture) and Dutch (individualist culture) was carried out to address the research questions and the proposed hypotheses. Table 1 shows the experimental conditions.

Table 1
Experimental conditions (Each condition was evenly distributed between Dutch and Chinese)

Experimental condition	Level of personalization	Rewards
Condition 1	No personalization	No rewards
Condition 2	No personalization	Have rewards
Condition 3	High personalization	No rewards
Condition 4	High personalization	Have rewards

An online survey was conducted on online users in the Netherlands and China to measure different constructs and answer the research questions and hypotheses. In addition, in the preliminary study and the main study, smartphones were chosen as the research object. Since smartphones were widely used and familiar in both China and the Netherlands.

3.2 Research procedure

Respondents were informed that they would participate in a study about online behavioral advertising before starting surveys for the preliminary study and the main study and they should give their consent. Also, they were informed that the study was anonymous and all the information they provided would be confidential.

Before starting the main study, a preliminary study was conducted to check proper manipulations, namely, level of personalization and rewards. Scenarios and advertisements for the main study were adjusted in response to the preliminary study results.

For the main study, the survey firstly included a couple of questions about personal information, such as gender, age, country of origin, and level of education. Due to the reason that the research objects are only Chinese and Dutch people, respondents from other countries were excluded. Afterward, respondents were provided with a scenario which contained an imaginary internet activity. All participants were asked to read the scenario carefully and to imagine that the situation described had actually happened to them. Next, a website with an advertisement was presented. The scenarios and advertisements varied in different conditions since it was a between-subject design. The design was performed in which level of personalization (no personalization vs. high personalization) and rewards (with rewards vs.

without rewards) were manipulated.

After reading the scenario and looking at the advertisement, respondents were asked to answer questions regarding the variables (level of personalization, perceived benefits, perceived risks, perceived intrusiveness, rewards, and click-through intentions) to test hypotheses. In addition, to make sure that respondents read the scenarios carefully and extensively, they needed to answer questions about the content of the scenario and the advertisement. These questions were asked at the end of the survey, as a manipulation check.

3.3 Preliminary study

A preliminary study was conducted to develop the stimulus materials and to check manipulations. In total, 49 respondents participated, of which 49% are Dutch (N=24) and 51% are Chinese (N=25). In addition, all these participants were left out from the main study sample.

To check whether the manipulations of personalization levels were successful, the preliminary study survey included two conditions, and participants were randomly assigned to one of the two conditions. For the non-personalized condition, respondents were asked to read a scenario that included an imaginary interment activity about searching Nespresso machines on the internet and an ad about iPhone 11 was presented on the next page. For the high personalized condition, respondents were asked to read a scenario that contained an imaginary internet activity about searching smartphones on the internet and an ad about iPhone 11 was shown on the next page. The combination of ads and scenarios for each condition can be found in Appendix A: Stimulus Materials for the preliminary study. After participants had read the scenario that contains an Internet activity and the advertisement, they were asked to evaluate their perception of personalized levels on a seven-point Likert-type scale (from 1-Strongly negative to 7-Strongly positive). Results showed that the mean scores of non-personalized and high personalized differed significantly, as can be seen in Table 2. The non-personalized condition had a mean score of 3.31(SD=1.37) and the high personalized condition had a mean score of 4.31(SD=1.48). Thus, the level of personalization was successfully manipulated.

Table 2
Descriptive statistics for different levels of personalization

	M	SD	N
No personalization	3.31	1.37	24
High personalization	4.31 [a]	1.48	25

Note
[a] significant difference from the no personalization condition
All variables measured on a 7-point Likert scale (1=strongly disagree- 7=strongly agree)

Rewards were manipulated by asking respondents what percentage of discount do they perceive as attractive, reasonable and realistic in an ad when considering buying a premium

brand smartphone of their choice. Prior to this, they were also asked to indicate the smartphone brand they are currently using. By doing so, respondents felt like they were buying the exact smartphone brand they like. Therefore, we could collect more reasonable and realistic discounts. The results showed that 10% to 20% of discount was perceived as attractive, reasonable and realistic by 40.8% of the respondents. Therefore, a 15% discount was used as a reward in the main study. Detailed results can be found in Table 3.

Table 3
Descriptive statistics of the percentage of discount

	N	Percent
Less than 5%	2	4.1%
5% to 10%	12	24.5%
10% to 20%	20	40.8%
20% to 30%	9	18.4%
More than 30%	6	12.2%
Total	49	100%

To control possible factors that might influence the effects of the manipulation of personalization on the dependent variables, the participants' attitudes to the ad, their attitudes to the design of the ad, and the appeal and impression of the ad were measured. These items were measured on a seven-point Likert-type scale (1-strongly negative, 7-strongly positive) to ensure that the ad showed to respondents in the preliminary study had neither extremely positive nor extremely negative effects. According to the result, respondents had a somewhat negative to neutral attitude (M=3.43, SD=1.24) towards the perceived ad. Therefore, the manipulation was successful.

To ensure that the trustworthiness and attitudes of online customers toward smartphones were not perceived as extremely positive or negative, participants were asked to describe their trustworthiness and attitude towards seven smartphone brands. A seven-point Likert-type scale (1-Strongly negative, 7-Strongly positive) was used to measure their responses. Based on the results (see Table 4), the attitude and trustworthiness of respondents towards Oppo and LG were much closer to neutral than other smartphones. In addition, LG is not widely known as the smartphone brand and there were rarely types of smartphones sold both in China and the Netherlands. Therefore, Oppo was chosen in the main study.

To decrease or prevent effects caused by manipulated websites, an artificial website that mimics a real commercial website was created. In doing so, the effect of website familiarity and reputation were ruled out. After conducting the preliminary study, the stimuli materials for the main study were improved and developed.

Table 4
Descriptive statistics of attitude and trustworthiness towards smartphones

	Attitude		Trustworthiness	
	M	SD	M	SD
Apple	2.84	1.45	2.29	1.16
Samsung	3.43	1.57	3.08	1.38
Nokia	3.37	1.35	2.88	1.03
Huawei	2.86	1.38	2.96	1.29
Oppo	3.80	1.31	3.51	0.94
LG	4.04	1.00	3.59	0.79
Xiaomi	3.71	1.29	3.57	1.12

Note
All variables measured on a 7-point Likert scale (1=strongly disagree- 7=strongly agree)

3.4 Stimulus materials

After the preliminary study, OPPO was selected as the brand. In addition, four conditions were designed and developed. For the non-personalized and no rewards condition, respondents were asked to read a scenario which included an imaginary interment activity about searching Nespresso machines on the official website and an ad about OPPO smartphone without discount appeared in the next page. The non-personalized and have rewards condition had the same imaginary internet activity but an ad with a 15% discount on the OPPO smartphone.

For the highly personalized and no rewards condition, respondents were asked to read a scenario that contained an imaginary internet activity about searching smartphones on the internet and an ad about OPPO smartphone without discount was shown on the next page. The highly personalized and have rewards condition contained a scenario that had the same imaginary internet activity but an ad with a 15% discount on the OPPO smartphone. One example of the scenario and the ad presented in the manipulation is displayed in Figure 2 and the complete combination of scenarios and ads can be found in Appendix B: Stimulus Materials for the main study.

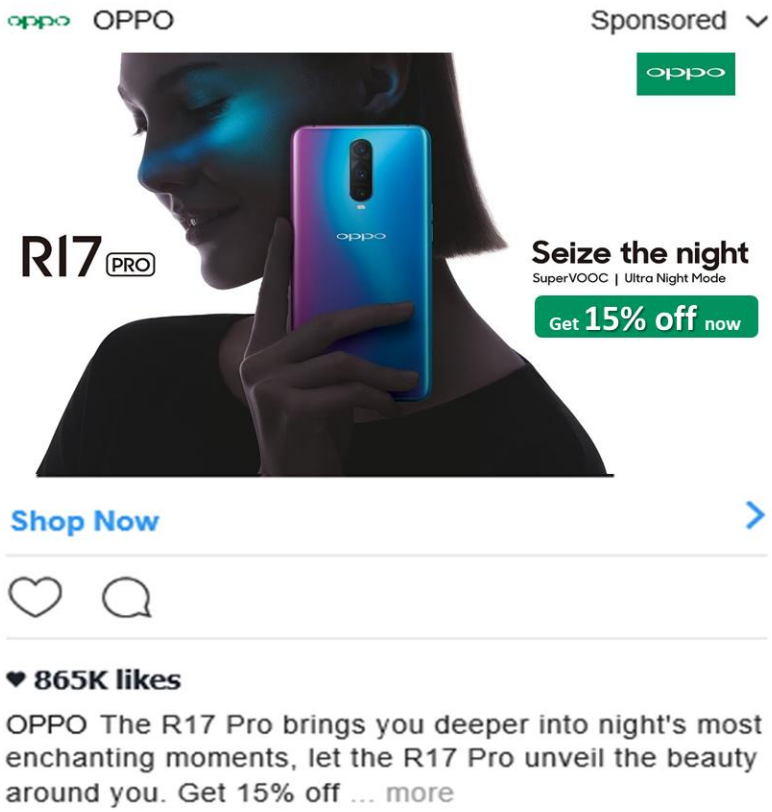

Figure2: Example of the scenario and the ad in one of the manipulations.

3.5 Main study participants

Participants for the main study were recruited personally, using social media channels (Facebook, Instagram, LinkedIn, WhatsApp, WeChat, and Weibo) based on a hyperlink to the questionnaire. In total, 195 respondents were collected, of which 38 did not finish the survey. Of these rest respondents, 18 were neither from China nor the Netherlands, which was a necessary pre-condition for the survey. Besides, two questions about the scenario and the advertisement were asked to ensure respondents read them carefully and thoroughly. Respondents who did not read them carefully and thoroughly were counted as invalid responses. The only respondent born in the 1960s, which was regarded as an outliner, was excluded from the research to optimize the result. Therefore, data from 129 respondents were used for the analysis, of whom 57 (24 Chinese and 33 Dutch) were male and 70 (38 Chinese and 32 Dutch) were female. Most of the respondents were born between 1990 and 1999, of whom 48 were Chinese and 52 were Dutch. Most respondents are highly educated (less than bachelor=10.1%, bachelor=48.8%, master=38.8%, higher than master=2.3%). Further demographic information can be found in Table 5 below.

Table 5
Demographic information of the respondents

Condition	1		2		3		4		Total	Percentage
Nationality	CN	NL	CN	NL	CN	NL	CN	NL		
Gender										
Male	5	9	7	8	5	9	7	7	57	44.2%
Female	12	6	7	9	9	9	10	8	70	54.3%
Others	0	0	1	0	0	0	1	0	2	1.5%
Total	17	17	15	17	14	18	18	15	129	100%
Year of birth										
≥ 2000	2	4	3	0	4	3	0	2	18	14.0%
1990 - 1999	13	11	12	13	8	15	15	13	100	77.5%
1980 - 1989	2	0	3	1	2	0	3	0	11	8.5%
1970 - 1979	0	0	0	0	0	0	0	0	0	0%
1960 - 1969	0	0	0	0	0	0	0	0	0	0%
<1960	0	0	0	0	0	0	0	0	0	0%
	17	15	18	14	14	18	18	15	129	
Education										
Less than bachelor	1	3	0	4	1	2	0	2	13	10.1%
Bachelor	12	5	6	6	9	6	12	7	63	48.8%
Master	3	7	9	6	4	10	5	6	50	38.8%
Higher than master	1	0	0	1	0	0	1	0	3	2.3%
Total	32		32		32		33		129	100%

Note
Condition 1: Non-personalized X No rewards
Condition 2: Non-personalized X Have rewards
Condition 3: High personalized X No rewards
Condition 4: High personalized X Have rewards

3.6 Manipulation checks

A manipulation check was conducted to test whether the stimulus materials were correctly manipulated.

To check whether the personalization manipulation was successful, respondents were asked to evaluate their perceived level of personalization on a 7-point Likert scale ranging from "Strongly disagree" to "Strongly agree". The construct for level of personalization consists of four items ("I think this advertisement is tailored to the situation presented in the scenario", "I see the situation presented in the scenario in this advertisement", "this advertisement contains the problem that the scenario presented", "this advertisement contains the situation presented in the scenario". Manipulation check results (Table 6) show that the mean score in the high

personalization condition was significantly higher than the mean score in the low personalization condition. Therefore, the manipulation of the level of personalization was successful.

Table 6
Descriptive statistics for different levels of personalization

	M	SD	N
No personalization	2.67	1.58	64
High personalization	4.93[a]	1.24	65

Note
[a] significant difference from the no personalization condition
All variables measured on a 7-point Likert scale (1=strongly disagree- 7=strongly agree)

Next, the manipulation of reward was checked with a single question ("What percentage of discount do you perceived as attractive, reasonable and realistic in an ad when considering buying a premium brand smartphone of your choice?"). Results (Table 7) indicate that most of the respondents, both Chinese and Dutch, regard 10% to 20% as attractive, reasonable and realistic reward.

Table 7
Descriptive statistics of the percentage of discount

	N_CN	N_NL	Total	Percent
Less than 5%	3	2	5	3.9%
5% to 10%	12	10	22	17.1%
10% to 20%	30	37	67	51.9%
20% to 30%	15	9	24	18.6%
More than 30%	7	4	11	8.5%
Total	64	65	129	100%

Thirdly, manipulation check of the attitude and trustworthiness towards OPPO were conducted to ensure that respondents have neither strongly positive nor strongly negative attitude and trustworthiness towards the brand. Respondents were asked to describe their attitude and trustworthiness towards OPPO on a seven-point Likert-type scale (1-Strongly disagree, 7-Strongly agree). Three items ("I regard OPPO as a good brand", "I regard OPPO as a positive brand", "I regard OPPO as a satisfying brand") were used to check the attitude towards OPPO and four items ("I trust OPPO", "I think I can rely on OPPO and its products", "I think OPPO is an honest brand", "The OPPO brand gives me a feeling of safety") were used to check the trustworthiness towards OPPO. Results (Table 8) indicated that respondents had a neutral to somewhat positive attitude ($M=4.55$, $SD=1.01$, $t=47.05$, $p<0.001$) and neutral to somewhat positive ($M=4.22$, $SD=1.19$, $t=40.42$, $p<0.001$) trustworthiness towards OPPO. Therefore, respondents regard OPPO neither too exciting nor too boring.

Lastly, to avoid other possible factors that might influence the manipulation of personalization, attitudes by respondents to the advertisement and the design of the advertisement were measured. Results (Table 8) indicate that their attitudes were neither strongly negative nor strongly positive, which was consistent as expected.

Table 8
Descriptive statistics of possible factors which might influence the manipulations

	M	SD	N
Attitude towards the advertisement	4.11	1.36	129
Attitude towards the design of the advertisement	4.47	1.31	129
Trustworthiness of OPPO	4.22	1.19	129
Attitude towards OPPO	4.55	1.01	129

Note:
All variables measured on a 7-point Likert scale (1=strongly disagree- 7=strongly agree)

3.7 Measures

The constructs used to measure the variables are listed below. All items were measured on a seven-point Likert scale ranging from "strongly disagree" to "strongly agree". An overview of the measured items can be found in Appendix C: Overview of items to measure constructs.

Level of personalization. The level of personalization in this research was measured by means of the perceived level of personalization scale conducted by Dijkstra (2005). This scale consisted of 4 items ("This advertisement is tailored for me", "I see my own situation in this advertisement", "This advertisement contains the problem I recently faced", "This advertisement contains my personal situation") which participants were asked to answer on a 7-point Likert scale (from "strongly disagree" to "strongly agree").

Perceived benefits. The scale of He Li et al. (2016) was used to measure perceived benefits in this study. The scale consisted of 5 items and was measured by means of a 7-point Likert scale from strongly disagree to strongly agree. The items were stated as followed: 1. "When the ad was shown, I thought it was helpful." 2. "When the ad was shown, I thought it was useful." 3. "When the ad was shown, I thought it was interesting." 4. "I thought the ad is relevant to my interest." 5. "I thought the ad provided me with sufficient information about the product."

Perceived risks. The items for measuring perceived risks were adapted from papers by Smith et al. (1996) and Smit, Noort, & Voorveld (2014). The construct consisted of 6 items ("I feel bothered when online services try to collect my personal information for commercial purposes", "I am concerned that online services collected too much information about me for commercial purposes", "I feel bothered when online services are able to track my personal information", "I am concerned that my personal information could be misused by online services", "I fear that my personal information has not been stared safely", "I feel uncomfortable when my personal information is shared without permission").

Perceived intrusiveness. Perceived intrusiveness was measured by 7 items that were adapted from prior research by Hairong Li et al. (2002). The items were stated as follows: "When the ad was shown, I thought it was distracting.", "When the ad was shown, I thought it was disturbing.", "When the ad was shown, I thought it was forced.", "When the ad was shown, I thought it was interfering.", "When the ad was shown, I thought it was intrusive.", "When the ad was shown, I thought it was invasive.", "When the ad was shown, I thought it was obtrusive."

Rewards. Rewards were measured in two conditions, namely "no rewards" and have rewards". Respondents were randomly assigned to one of the conditions.

Click-through intention. The intention to click the advertisement was measured by 3 items. These items were adapted from earlier work by Aguirre et al. (2015) and stated as follows: "I am inclined to click on this advertisement.", "The probability of me clicking on this advertisement is high.", "I have no problem clicking on this advertisement."

3.8 Validity and Reliability

To test whether all the constructs were measured by the items, a factor analysis was conducted. Therefore, all the items from the survey were analyzed to see whether they loaded in the right constructs or not. Table 9 shows the final factor analysis for items. The outcome of the validity analysis provided confidence in the factorability of the construct.

Following the factor analysis, the internal consistency is calculated to test reliability. In order to check reliability, Cronbach's alpha was calculated for all items of each construct. A construct was reliable if the alpha was 0.70 or higher. Table 9 shows an overview of the Cronbach alpha score of each construct. As shown in the table, all scales had an alpha level higher than .7, which concludes a good internal consistency; showing that the individual scale items measure the constructs good.

Table 9 *Reliability and Factor analysis*

Item	1	2	3	4	5
1. Level of personalization (α = 0.968)					
I think this ad is tailored to the situation presented in the scenario	0.941				
I see the situation presented in the scenario in this ad	0.957				
This ad contains the problem that the scenario presented	0.962				
This ad contains the situation presented in the scenario	0.962				
2. Perceived benefits (α = 0.916)					
When the ad was shown, I thought it was helpful		0.902			
When the ad was shown, I thought it was useful		0.941			
When the ad was shown, I thought it was interesting		0.871			
I thought the ad is relevant to my interest.		0.886			
I thought the ad provided me with sufficient information of the product.		0.718			
3. Perceived risks (α = 0.899)					
I feel bothered when online services try to collect my personal information for commercial purposes			0.883		
I am concerned that online services collected too much information about me for commercial purposes			0.836		
I feel bothered when online services are able to track my personal information			0.900		
I am concerned that my personal information could be misused by online services			0.687		
I fear that my personal information has not been stared safely			0.861		
I feel uncomfortable when my personal information is shared without permission			0.788		
4. Perceived intrusiveness (α = 0.928)					
When the ad was shown, I thought it was distracting.				0.645	
When the ad was shown, I thought it was disturbing.				0.811	
When the ad was shown, I thought it was forced.				0.809	
When the ad was shown, I thought it was interfering.				0.888	
When the ad was shown, I thought it was intrusive.				0.918	
When the ad was shown, I thought it was invasive.				0.896	
When the ad was shown, I thought it was obtrusive.				0.868	
5. Click-through intentions towards ads (α = 0.922)					
I am inclined to click on this ad					0.955
The probability of me clicking on this ad is high					0.941
I have no problem clicking on this advertisement					0.896
R Squared	0.461	0.700	0.018	0.097	0.000
Eigenvalue	3.652	3.758	4.123	4.913	2.599

4. Results

To analyze results from the survey, MANOVA was conducted to study the effects of independent variables on the dependent variable. Therefore, Wilks' Lambda test was conducted to examine the significant differences of the mean scores and standard deviations between all conditions and the interaction effects in the study. Moreover, table 10 shows the outcomes of the multivariate test.

Table 10
Outcome of MANOVA test

	Wilks' Lambda	F-value	p-value
Level of personalization	0.160	2.522	0.000
Level of personalization*rewards	0.959	1.069	0.376
Level of personalization* culture difference	0.920	2.147	0.081
Rewards* culture difference	0.924	2.043	0.094

Note:
Significant at a.=0.05 level

Based on the results, we can conclude that there is a significant effect of the level of personalization on the dependent variable. Besides, the outcome of the between subjects design is presented in Table 11. The table shows the significant effects at alpha (a.=0.05) across the different variables.

Table 11
Outcome of the test of between subjects effects

		F-value	p-value
Level of personalization	Click-through intentions	6.284	0.000
	Perceived benefits	9.031	0.000
	Perceived risks	1.226	0.240
	Perceived intrusiveness	0.885	0.618
Level of personalization*Culture differences	Perceived risks	1.208	0.255
	Perceived intrusiveness	0.932	0.557
	Click-through intentions	1.474	0.227
Level of personalization* Rewards	Click-through intentions	0.570	0.450
Rewards* Cultural differences	Click-through intentions	0.096	0.758
Rewards	Click-through intentions	3.434	0.066
Cultural differences	Click-through intentions	5.531	0.020

Note:
All variables measured on a 7-point Likert scale (1=strongly disagree- 7=strongly agree)
Significant at a.=0.05 level

4.1 Main effect of level of personalization and rewards

Hypothesis 1a stated that respondents who were exposed to high personalized advertising would have a higher positive influence on online users' click-through intentions compared to those who were exposed to no personalized advertising. Results indicated that there was a significant difference in click-through intentions between high-personalized ad and non-personalized ad ($F=6.284$, $p<0.001$). In addition, an analysis of covariance showed that click-through intentions were significantly higher among respondents who were exposed to the high-personalized ad than among respondents who were exposed to the non-personalized ad (*M*High =4.46, *SD*High =1.47; *M*Non =3.08, *SD*Non=1.41). Therefore, hypothesis 1a is supported.

Hypothesis 1b predicted that perceived benefits are higher when the ad is high personalized than non-personalized. Results showed that the effect of the level of personalization on perceived benefit was significant ($F=9.031$, $p<0.001$). Moreover, there was also a significant mean difference in perceived benefit between high-personalized ad (*M*High =4.41, *SD*High =1.10) and non-personalized ad (*M*Non =3.13, *SD*Non=1.25). Therefore, hypothesis 1d is supported.

In hypothesis 1c and 1d, the effects of level of personalization on perceived intrusiveness and perceived risk were predicted. However, results showed that there was no significant difference in perceived intrusiveness ($F=.885$, $p=0.618$) and perceived risk ($F= 1.226$, $p=0.240$) between high-personalized ad and non-personalized ad. This implies that hypothesis 1c and 1d are not supported.

Table 12
Descriptive statistics for main effect of level of personalization

	Level of personalization	
	High-personalized	Non-personalized
Click-through intentions towards ads	M=4.46, SD=1.47	M=3.08, SD=1.41
Perceived benefits	M=4.41, SD=1.10	M=3.13, SD=1.25
Perceived risks	M=5.49, SD=1.17	M=5.47, SD=1.17
Perceived intrusiveness	M=3.85, SD=1.34	M=4.27, SD=1.06

Note
All variables measured on a 7-point Likert scale (1=strongly disagree- 7=strongly agree)

In hypothesis 2a, it is predicted that online customers have a higher intention to click the ad when rewards are presented than not presented. However, results indicated that there is no significant ($F=3.434$, $p=0.066$) effect for rewards on click-through intentions by online customers. Thus, hypothesis 2a is not supported.

4.2 Interaction effects

Level of personalization × Rewards

In hypothesis 2b, it was predicted that online customers who exposed to a highly personalized ad have a higher intention to click the ad when rewards are presented than not presented. However, the study showed no two-way interaction effects of personalized levels and rewards on click-through intentions towards ads (F=0.570, p=0.450). Hence, hypothesis 2b is not supported.

Cultural difference× Rewards

Hypothesis 2c proposed that online customers in Collectivist culture have a higher intention to click the ad than those in individualist culture when rewards are presented. Results indicated that cultural differences did not moderate the effect of rewards on click-through intentions towards ads (F=0.089, p=0.766). Therefore, hypothesis 2c is not supported.

Level of personalization × Cultural difference

Results showed that the interaction effect of personalized levels and cultural difference is not a statistically significant predictor of perceived risks (F=1.208, p=0.255), perceived intrusiveness (F=0.932, p=0.557) and click-through intentions towards ads (F=1.474, p=0.227). Therefore, hypothesis 6a, 6b and 6c are not supported.

4.3 Test of Mediation

The mediation analysis revealed a significant effect of personalized levels on perceived benefits (F=9.031, p<0.001). Further, the analysis revealed a significant effect of perceived benefits on click-through intention towards ads (F=296.190, p<0.001). Moreover, there was a significant direct effect of personalized levels on click-through intentions towards ads (F=6.284, p<0.000). Therefore, the mediation effect of perceived benefits is established, which means hypothesis 3 is supported.

As mentioned, the effect of personalized levels on click-through intentions towards ads was significant (F=6.284, p<0.000). However, the mediation analysis revealed that the level of personalization was not a significant predictor for perceived risks (F=1.226, p=0.240). Additionally, perceived risks had no effect on click-through intentions towards ads (F=2.280, p=0.133). There must be an indirect effect of personalized levels on click-through intentions towards ads through perceived risks and a direct effect of personalized levels on click-through intentions to make the mediation effect happen. All three paths, therefore, need to be significant to support the mediation effect. In conclusion, no mediation effect of perceived risks is established, leading to the rejection of hypothesis 4.

Based on previous results, it had already been proved that the level of personalization had a

direct effect on click-through intentions towards ads. In addition, perceived intrusiveness had a significant effect on click-through intentions towards ads ($F=13.671$, $p<0.001$). However, there was no significant effect of personalized levels on perceived intrusiveness ($F=0.885$, $p=0.618$). Therefore, it implies that hypothesis 5 is rejected, which means the mediation effect of perceived intrusiveness is not supported. Table 13 shows an overview with outcomes for all hypothesizes.

Table 13
Overview of the Hypotheses Testing

	Hypothesis	Results
H1a	Click-through intentions towards ads are higher when the ad is more highly personalized than non-personalized.	Supported
H1b	Perceived benefits are higher when the ad is more highly personalized than non-personalized.	Supported
H1c	Perceived risks are higher when the ad is more highly personalized than non-personalized.	Not supported
H1d	Perceived is higher when the ad is more highly personalized than non-personalized.	Not supported
H2a	Online customers have a higher intention to click the ad when rewards are presented than not presented.	Not supported
H2b	Online customers who exposed to a highly personalized ad have a higher intention to click the ad when rewards are presented than not presented.	Not supported
H2c	Online customers in Collectivist culture have a higher intention to click the ad than those in individualist culture when rewards are presented.	Not supported
H3	Perceived benefits by online users mediate the effect of level of personalization on click- through intentions towards ads.	Supported
H4	Perceived risks by online users mediate the effect of level of personalization on click- through intentions towards ads.	Not supported
H5	Perceived intrusiveness by online users mediates the effect of level of personalization on click- through intentions towards ads.	Not supported
H6a	Perceived risks are higher in individualist culture than in collectivist culture when ads are highly personalized.	Not supported
H6b	Perceived intrusiveness is higher in individualist culture than in collectivist culture when ads are highly personalized.	Not supported
H6c	Click through intentions towards ads are higher in individualist culture than in collectivist culture when ads are highly personalized.	Not supported

5. Discussion

This study aims to investigate the effect of level of personalization (high vs. non), rewards (yes vs. no) and culture difference (Chinese vs. Dutch) on click-through intentions towards ads by online customers. Moreover, perceived benefits, perceived risks and perceived intrusiveness were expected to mediate the effects of these variables on click-through intentions. In the following section, findings will be discussed and possible implications are going to be identified.

5.1 Discussion of the results

In the study, it was expected that highly personalized ads lead to higher click-through intentions in comparison with non-personalized ads. This expectation was supported by the result. This finding acknowledged that online consumers have greater intentions to click the ad when it is highly personalized. In addition, the study also found that high personalized ads have higher perceived benefits than non-personalized ads by online consumers. In other words, they thought high personalized ads as helpful and useful than non-personalized ads. It also indicated that these high personalized ads might be relevant and suit their needs. These two results are in line with the findings conducted by Freya De Keyze (2015) and Bleier (2015).

However, the study did not find any evidence that high-personalized ads lead to higher perceived risks than non-personalized ads. According to the privacy calculus model, consumers tend to put their perceived risks aside if they expect high personalized ads to result in attractive benefits, such as useful and relevant information about the advertised products based on their interests (Berezowska, Fischer, & Ronteltap, 2015). In other words, the perceived benefits overweigh their perceived risks when they exposed to high personalized ads. In addition, individuals' characteristics and their previous privacy experiences are also related to their perceived benefits and perceived risks (Xu et al., 2011). Online customers who had positive experiences towards high personalized ads could have stronger intentions to click the ads. These could be important reasons that highly personalized ads did not result in a higher perceived risk than non-personalized ads. The study also did not find evidence that highly personalized ads have higher perceived intrusiveness than non-personalized ads. This might be an indication that the level of personalization and perceived intrusiveness is very content-dependent. For instance, Kerem & Ulla (2018) found that browsing a high personalized ad might be regarded as a wonderful and pleasant experience for one customer due to the design of the ad but be disturbing and intrusive for others.

Next, the result of the study showed that the click-through intentions were not higher when rewards were offered than not offered, which is in line with findings by Gabisch and Milne (2013). They stated that offering rewards might have unintended or undesirable consequences

for consumer privacy as they may intensify privacy concerns and lead to mistrust. Some online consumers consider rewards as a ploy for getting them to reveal sensitive personal information (Gabisch & Milne, 2013). Moreover, online consumers are somewhat reluctant to receive location-based coupons or discounts on their cellphones due to privacy concerns (Bacile & Goldsmith, 2011). This could be a reason that click-through intentions towards ads did not increase when rewards were presented.

In addition, it was expected that online customers who exposed to a highly personalized ad have a higher intention to click the ad when rewards are presented than not presented. However, results showed that rewards did not moderate the effects of personalized levels on click-through intentions towards ads. A possible explanation could be that the persuasiveness of rewards for encouraging click-through intentions depends on the regulatory focus by customers. To be more specific, individuals' regulatory focus refers to the extent to which their goals are either prevention focus (avoid losses) or promotion focus (achieve gains) and prevention focus customers and promotion focus customers differ in weighing costs and benefits (Gabisch & Milne, 2013). Individuals with a prevention focus address safety and security needs when exposed to personalized ads, therefore, having rewards or not did not affect their click-through intentions when they exposed to personalized ads.

Moreover, it was expected that online customers in collectivist culture have a higher intention to click the ad than those in individualist culture when rewards are presented. In addition, it was also predicted that highly personalized ads would lead to higher perceived intrusiveness, higher perceived risks and higher click-through intentions towards ads in individualist culture than collectivist culture. However, results showed that there is no significant moderation effect for cultural difference in the relationship between rewards and click-through intentions towards ads. Also, no moderation effects were found on the relationship between personalized levels and perceived risks, personalized levels and perceived intrusiveness, personalized levels and click-through intentions towards ads. A study conducted by Oyserman et al. (2002) explained that collectivist and individualist cultures do not necessarily reflect a distinction between eastern and western culture. They stated that geographic boundaries have been called into question in the classification of collectivist culture and individualist culture. Since some of the Asian countries ((e.g., North Korea, Japan) were equal or lower in collectivist than America and European countries (Building, 2009). Therefore, their findings could be an explanation that cultural differences, Chinese and Dutch culture values in this paper, do not have moderation effects.

Furthermore, the study found that perceived benefits perform a mediating role in the link between different levels of personalization and click-through intentions. Similar to prior research (e.g., Bol, Dienlin, Sax, Boerman, & Strycharz, 2018), findings showed that the effects of personalization on click-through intentions is dependent on the perception of benefits (e.g.,

perceived informative, perceived interesting and perceived useful) This result is also consistent with findings by Ozcelik & Varnali (2019). However, there are no significant mediating effects of perceived risks and perceived intrusiveness on the relationship between levels of personalization and click-through intentions towards ads. As explained, personalized levels did not predict perceived intrusiveness and perceived risks in this study. Moreover, the results of the study also showed that perceived intrusiveness and perceived risks both do not have effects on click-through intentions towards ads. Bol et al. (2018) found that trust plays an important role in the calculation of positive beliefs and negative beliefs when online users exposed to personalized ads. If customers trust the advertised brand more, they are more likely to click the ad regardless of their perceived intrusiveness and perceived risks. This could be a reason that there are no mediation effects for perceived risks and perceived intrusiveness.

5.2 Theoretical and practical implications

The study deepens our understanding of online behavioral advertising and its effectiveness. One of the main contributions is the finding about the effect of cultural differences on click-through intentions by online customers. Though there already have been many studies regarding OBA, no studies in a cross-cultural setting are present in literature. To a great extent, this study bridges the knowledge gap concerning cultural difference in the OBA context.

The study compared different levels of personalization and their effects. Results indicated that there is a significant difference between the high level of personalization and non-personalization on perceived benefits and click-through intentions by online customers. Moreover, perceived benefits were found to have a mediation effect on the relationship between personalization and click-through intentions. On the contrary, the study did not find a significant effect of personalization on perceived intrusiveness and perceived risks by online customers. In addition, perceived risks and perceived intrusiveness did not have mediation effects on the relationship between personalization and click-through intentions.

Furthermore, cultural differences and rewards were introduced to measure the moderation effects of personalization on click-through intentions. Few studies have combined these two concepts to investigate their effects on the relationship between different levels of personalization and click-through intentions. The study did not find solid proof to prove the interaction effects of personalization, cultural difference and rewards on click-through intentions. However, researchers found that cultural differences have direct effects on click-through intentions by online customers.

In addition to theoretical implications, the study also provides practical implications about the effect of level of personalization on click-through intentions. The rapid development of the Internet provides countless opportunities for marketers and companies to promote their

products in a brand-new way. Moreover, the study found that high-personalized ads triggered higher ad effectiveness. Therefore, marketers and advertisers might create tailed ads to appeal to more targeted customers to increase the effectiveness of their ads. Perceived benefits are also an important factor that should be paid more attention by marketers and advertisers. Thus, in the era of digital marketing, ads, which contain interesting, helpful and useful content, are going to be more appealing to online customers.

Cultural difference is also found to be another important factor that influences OBA effectiveness. This may have implications for companies that want to expand and emphasize their certain globe market and implement their marketing strategies.

5.3 Limitations and future research

Although this study contributed to theoretical and practical knowledge of online behavioral advertising, there still have several limitations that need to be improved in the future. The first limitation is the sampling method and the number of respondents. Respondents were collected mainly through personal network of the researcher, which lead to a less representative sample and limitation of the final findings. In addition, the number of respondents were relatively less since the study had a limitation of only focusing on Dutch and Chinese people. Therefore, further study might use different kinds of sampling methods to collect diverse respondents and increase the sample numbers.

Next, for further study, it would be more interesting to explore another factor, which is trustworthiness towards the adviser, into the research model. According to the research from Boerman et al. (2017), trust also plays an important role in the effectiveness of OBA. Bleier (2015) also found that highly personalized ads increased click-through intentions rates compared to non-personalized ads, only when online customers trust the advertiser. Therefore, it would be interesting to find out how trustworthiness works on the click-through intentions towards ads by online customers.

Third, the study was thoroughly conducted via the Internet. Respondents were asked to carefully read the scenario and answer the questions accordingly. However, people are exposed to thousands of ads in real life and they might complete the survey without full attention. Thus, eye-tracking technology might be a good choice to monitor and record the eye movements for respondents. Through eye-tracking, attention by respondents in the ad can be visualized and measured. Therefore, in further study, it is suggested to apply eye-tracking during the experiment.

Moreover, the independent variable, rewards, was not manipulated properly in the main study. It was supposed to ask respondents whether they recognized the discount or not in order to check the manipulation of rewards. Doing so, the manipulation would be more accurate and

successful.

Last, the study only focused on the specific type of cultural difference and only conducted the survey for respondents from the Netherlands and China. Further study could discuss different types of cultural difference, such as power distance and uncertainty avoidance, and do the experiment across the world.

6. Conclusions

The study demonstrated that the click-through intention towards the ad is influenced by level of personalization, perceived benefits and cultural difference. However, these effects were not mediated by perceived intrusiveness and perceived risks. Moreover, rewards did not affect click-through intentions as expected. Last, this study did not find the interaction effects of rewards, level of personalization and cultural difference on click- through intentions towards ads.

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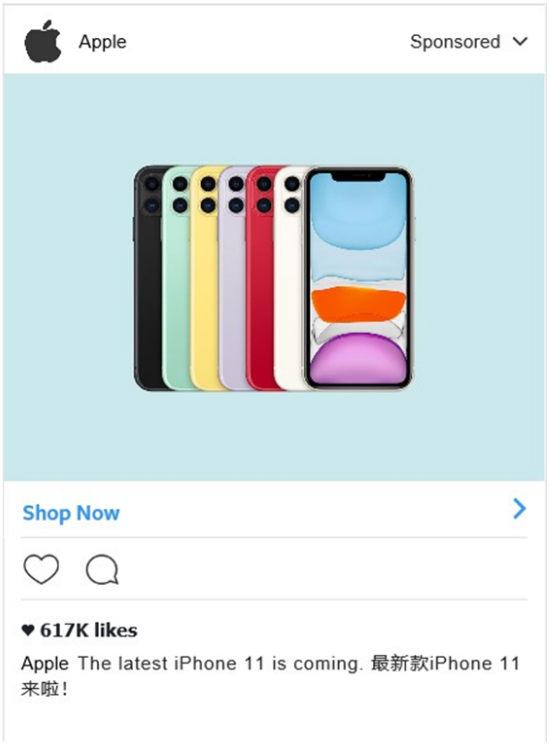
Appendix A: Stimulus Materials for the preliminary study

Condition 1: non- personalization

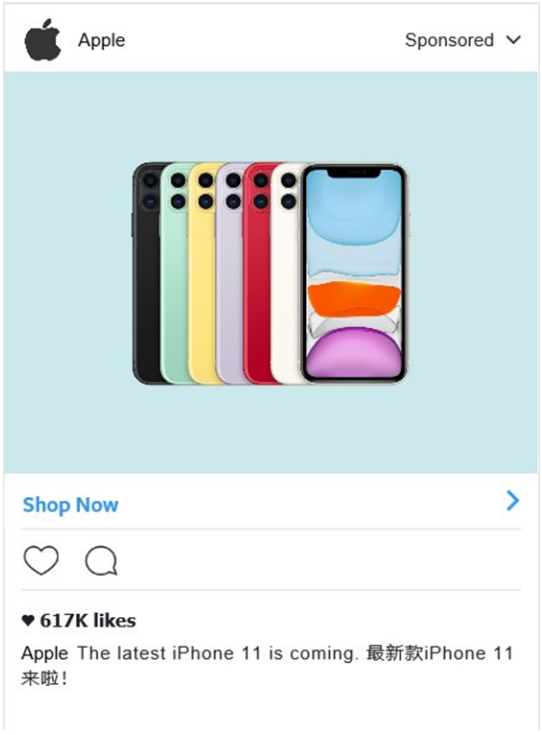
Imagine, your old Nespresso coffee machine cannot be used any more. Therefore, you want to buy a new one. You turn on your laptop and start searching different kinds of Nespresso coffee machines on the Nespresso website. After a while, you find out two types of machines and ask your friend which one is better. One of your friends suggests you to go to the Nespresso's physical store to check both machines.

On the same night, you browse the Internet and you see the following advertisement:



Condition 2: high- personalization

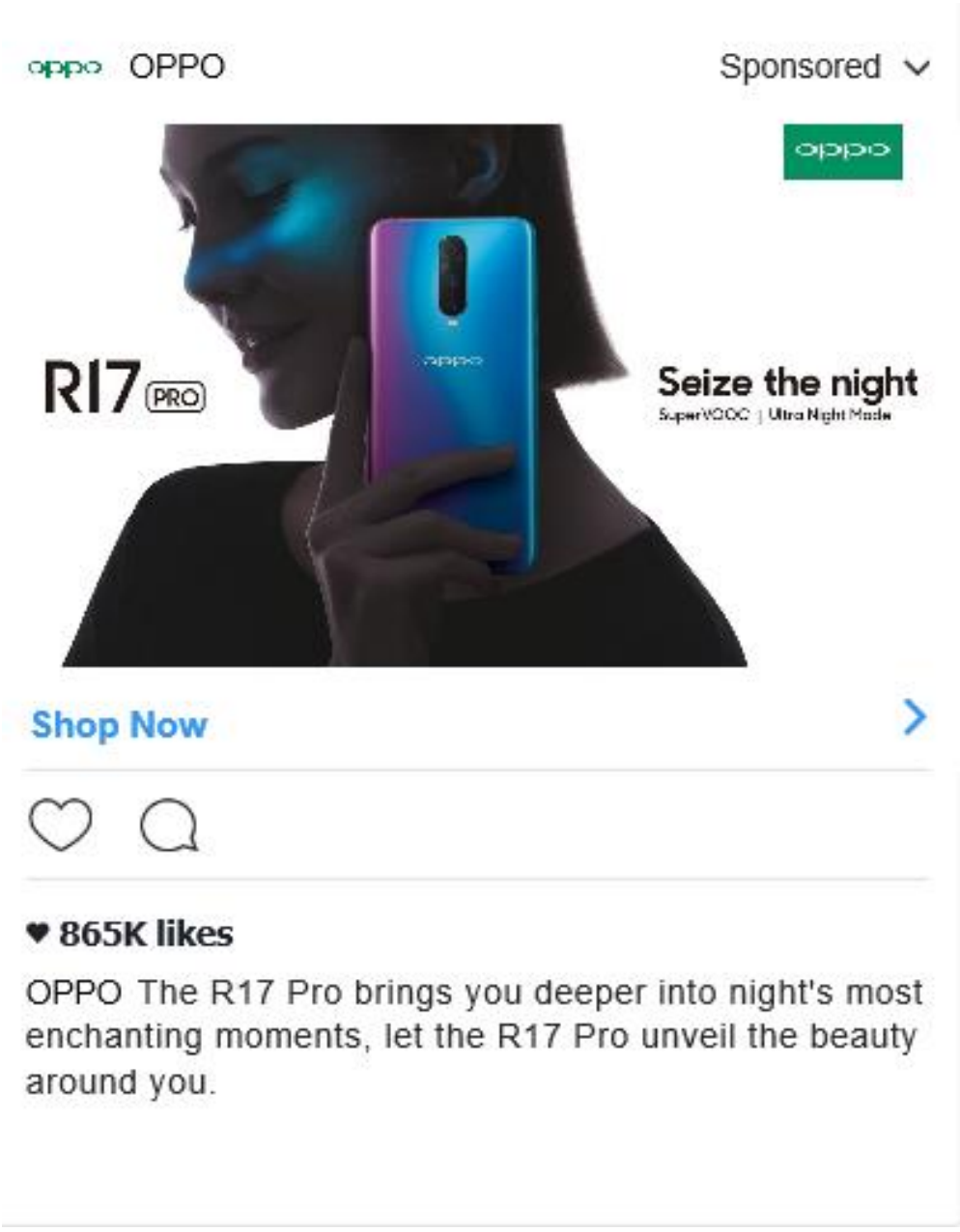
Imagine, your old smartphone cannot be used any more. Therefore, you want to buy a new one. You turn on your laptop and start searching different kinds of smartphone on the Internet. After a while, you find out Apple released their newest iPhones. Therefore, you go on searching information about these iPhones. However, you cannot decide to buy iPhone 11 or iPhone 11 Pro. You ask your friend which one is better. One of your friends suggests you to go to the physical store to check both machines.
On the same night, you browse the Internet and you see the following advertisement:



Appendix B: Stimulus Materials for the main study

Condition 1: non-personalized*no rewards

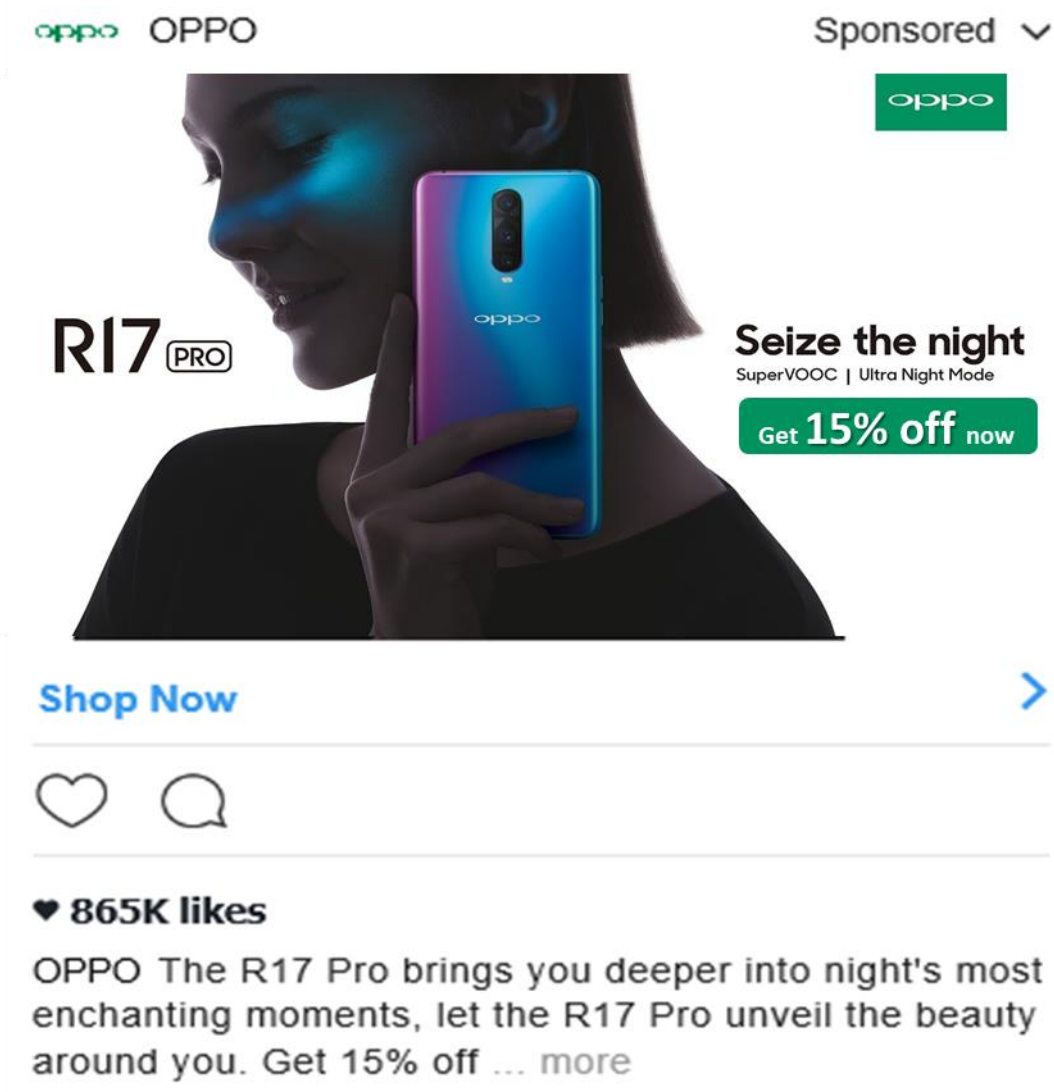
Imagine, your old Nespresso coffee machine cannot be used any more. Therefore, you want to buy a new one. You turn on your laptop and start searching different kinds of Nespresso coffee machines on the Nespresso website. After a while, you find out two types of machines and ask your friend which one is better. One of your friends suggests you to go to the Nespresso's physical store to check both machines.
On the same night, you browse the Internet and you see the following advertisement:



Condition 2: non-personalized*have rewards

Imagine, your old smartphone cannot be used any more. Therefore, you want to buy a new one. In addition, you want to buy a new smartphone with a night mode camera. You turn on your laptop and start searching different kinds of smartphone on the Internet. After a while, you find out OPPO released their R17 and R17 Pro smartphones with night mode. Therefore, you go on searching information about the smartphones. However, you cannot decide to buy OPPO R17 or OPPO R17 Pro. You ask your friend which one is better. One of your friends suggests you to go to the physical store to check both phones.

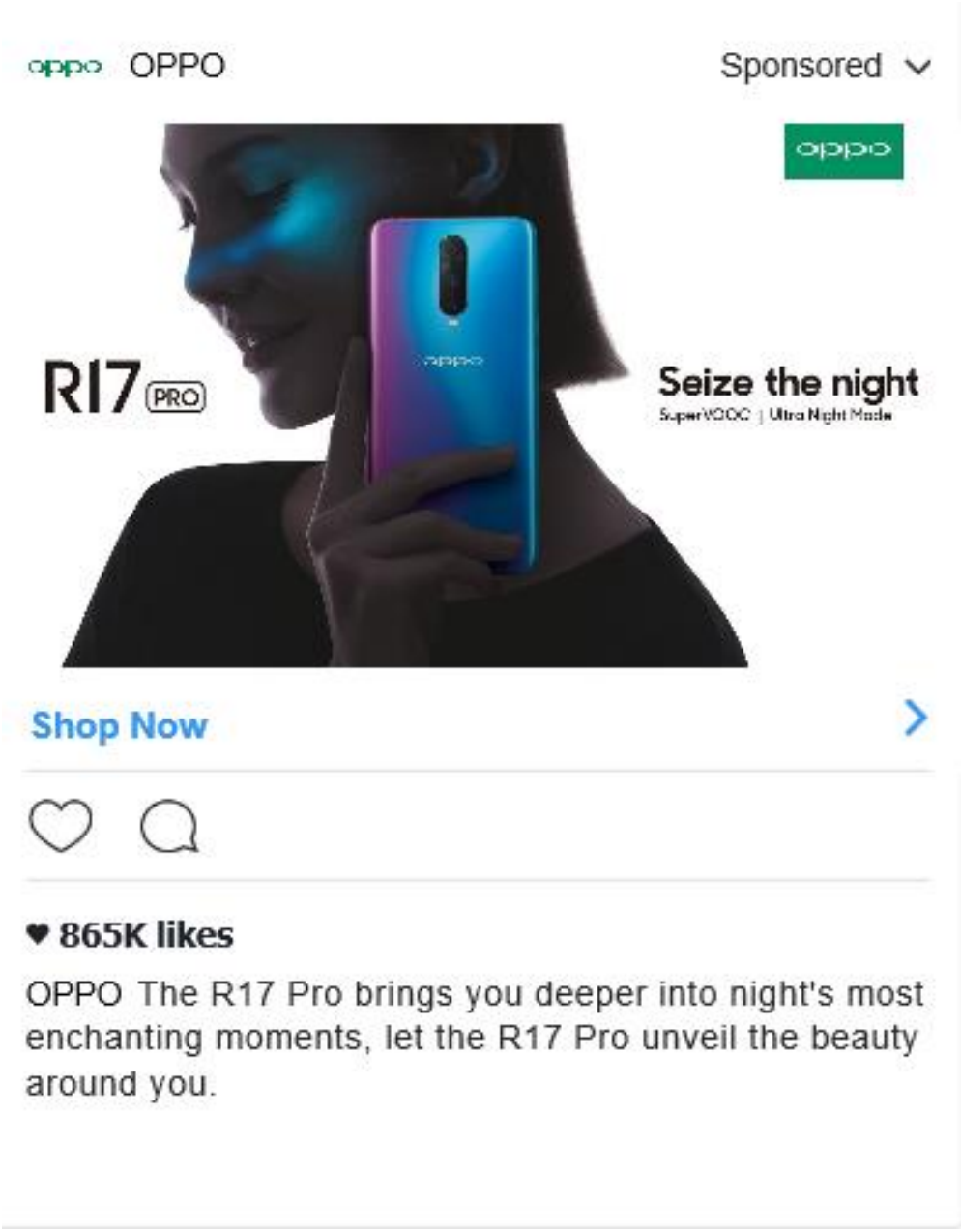
On the same night, you browse the Internet and you see the following advertisement:



Condition 3: high-personalized*no rewards

Imagine, your old smartphone cannot be used any more. Therefore, you want to buy a new one. In addition, you want to buy a new smartphone with a night mode camera. You turn on your laptop and start searching different kinds of smartphone on the Internet. After a while, you find out OPPO released their R17 and R17 Pro smartphones with night mode. Therefore, you go on searching information about the smartphones. However, you cannot decide to buy OPPO R17 or OPPO R17 Pro. You ask your friend which one is better. One of your friends suggests you to go to the physical store to check both phones.

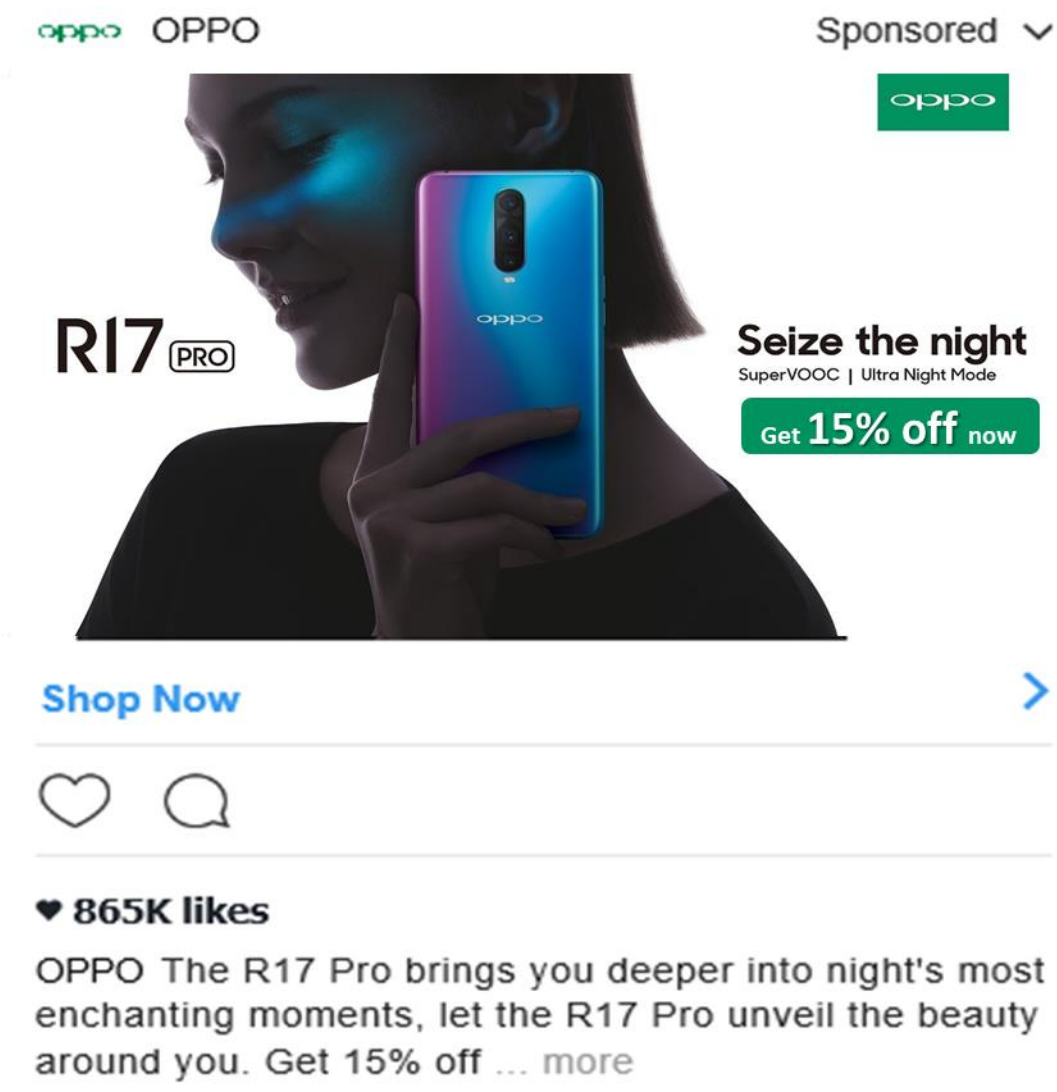
On the same night, you browse the Internet and you see the following advertisement:



Condition 4: high-personalized*have rewards

Imagine, your old smartphone cannot be used any more. Therefore, you want to buy a new one. In addition, you want to buy a new smartphone with a night mode camera. You turn on your laptop and start searching different kinds of smartphone on the Internet. After a while, you find out OPPO released their R17 and R17 Pro smartphones with night mode. Therefore, you go on searching information about the smartphones. However, you cannot decide to buy OPPO R17 or OPPO R17 Pro. You ask your friend which one is better. One of your friends suggests you to go to the physical store to check both phones.

On the same night, you browse the Internet and you see the following advertisement:



Appendix C: Overview of items to measure constructs

Constructs	Items	References
Perceived level of personalization (α = 0.968)	I think this ad is tailored to the situation presented in the scenario I see the situation presented in the scenario in this ad This ad contains the problem that the scenario presented This ad contains the situation presented in the scenario	Dijkstra (2005)
Perceived benefits (α = .916)	When the ad was shown, I thought it was helpful When the ad was shown, I thought it was useful When the ad was shown, I thought it was interesting I thought the ad is relevant to my interest. I thought the ad provided me with sufficient information of the product.	He Li et al., 2016
Perceived risks (α = 0.899)	I feel bothered when online services try to collect my personal information for commercial purposes I am concerned that online services collected too much information about me for commercial purposes I feel bothered when online services are able to track my personal information I am concerned that my personal information could be misused by online services I fear that my personal information has not been stared safely I feel uncomfortable when my personal information is shared without permission	Smith et al. (1996); Smit, Noort, & Voorveld, (2014)
Perceived intrusiveness (α = 0.928)	When the ad was shown, I thought it was distracting. When the ad was shown, I thought it was disturbing. When the ad was shown, I thought it was forced. When the ad was shown, I thought it was interfering. When the ad was shown, I thought it was intrusive. When the ad was shown, I thought it was invasive. When the ad was shown, I thought it was obtrusive.	Hairong Li, Edwards, & Lee, 2002
Click-through intention (α = 0.922)	I am inclined to click on this advertisement The probability of me clicking on this advertisement is high I have no problem clicking on this advertisement	Aguirre et al. (2015)