The effectiveness of online advertising via the behavioural targeting mechanism

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Key words
Online Advertising, behavioural targeting mechanism and consumer perception.

Abstract
This study aims to examine the effectiveness of online behavioural advertising in four dimensions that are perception, privacy concerns, targeted visible ads and advertisement characteristics. The results from a survey of 141 university students, which consist of students from two different regions, Europe and Asia, found that, overall, consumers have positive perceptions towards online behavioural targeting. This research found that privacy concerns are still salient issues in online behavioural targeting. European and Asian consumers have the same concerns about invasion of their privacy in relation to targeted ads. The model in this research shows that privacy concerns, targeted visible ads and advertisement characteristics factors have a significant effect on the perception of online behavioural targeting. In order to raise the positive perception of behavioural targeting, advertisement characteristics can be improved to be more attractive with relevant content and improved ads credibility. This research suggests that advertisers need to control the features of the advertisements to be more valuable for consumers. Thus, the more positive perceptions consumers have toward online advertising, the less concerns about privacy invasion there will be. Further, online behavioural targeting advertisements are more effective than normal visible ads without targeting. However, online behavioural targeting advertisements enforce firms to control and provide the privacy policy in order to decrease the consumer privacy concerns.

1 Introduction
Nowadays, advanced technology allows for the tracking of customer's shopping behaviour in browsing websites by using 'cookies' on a shopper's computer or recording a visiting shopper's computer IP address (Alreck et al. 2007). Then the advertisement of the products or services that users had browsed will be displayed on other websites. This advertising method is called *online behavioural targeting*.
Online behavioural targeting advertising enables the company to deliver the advertising to the specific group and help firms to get better information on consumer preference. However, targeting is viewed as an invasion of people's privacy. There are also some privacy concerns in the context of behavioural targeted advertising (Alreck et al. 2007; Goldfarb & Tucker 2011).

This research aims to examine the effectiveness of targeting consumers through online behavioural targeting. This study focuses on how privacy concerns, visible ads with targeted behaviour and advertisement characteristics effect the perception of the consumers on behavioural targeting advertisement. Prior research that has discussed online behavioural targeting has been conducted in the United States. In Europe, there is more awareness of privacy and data protection; while in Asia there is still a lack of trust about online advertising, although the number of Internet users in Asia is increasing rapidly. Therefore, this research aims to compare the perception of online behavioural targeting between European and Asian consumers. To examine the effectiveness of these strategies, empirical data is collected via questionnaire instrument from the sample of 141 students in Brunel University, UK.
In order to conduct the analysis, seven hypotheses are established to test the relationships of the variables and the conceptual model of the study. The first hypothesis aims to investigate the differences between European and Asian consumers' perception towards online behavioural targeting. The second hypothesis examines the differences between European and Asian consumers on privacy concerns. The third hypothesis tests the relationships between perception and privacy concerns. The fourth hypothesis tests

the relationship between perception, privacy concerns and targeted visible ads, while the fifth hypothesis tests the relationships between perception, targeted visible ad and ad characteristics. The sixth hypothesis investigates the privacy concern at different advertising display locations, which are website and social networking sites.

From this study, advertisers are able to have a better understanding of how European and Asian consumers perceive behavioural targeting advertising and whether the online behavioural targeting is intrusive to consumer's privacy when targeting their behaviour. This also included the location to display the advertisement that can influence the privacy concerns. Besides that, the study also answers how well targeted visible ads display contents that matched consumer interests, increasing positive consumer perceptions toward online behavioural targeting. Furthermore, this research also will answer how advertisement characteristics such as design and features affect consumer perception of online behavioural advertising.

2 Literature Review and Research Strategy
2.1 Online advertising background

Marketing is one of the area's most affected by online communications (Krishnamurthy &Singh 2005).Online advertising is one of the technologies that have been used to enhance online communications. Online advertising can be described as commercial contents available on the internet that is designed to notify customers about products or services (Schlosser et al. 1999). Online advertising was first launched in 1994, a banner ad sold to AT&T and displayed on the Hot Wired site (Hollis 2005 Robinson et al. 2007). In 2000, Google launched its AdWords service that opens the service to place ads on the search-results pages on google.com (Ratliff &Rubinfeld 2010).

2.2 Online Behavioural Targeting

Online behavioural targeting or online profiling refers to ads delivered to the targeted user based on information collected from past individual web searches and browsing behaviour (Yan et al. 2009;Borgesius 2013). Behavioural targeting is directing online advertisements to just those individuals who are more likely to be interested in the particular products and services (Shimp 2010). Figure 1shows the targeting process: firstly the ad serving system detects whether the user is in the target audience (media optimisation), then the creative optimisation occurs to serve the best ad for the viewer type (Chaffey & Chadwick 2012).
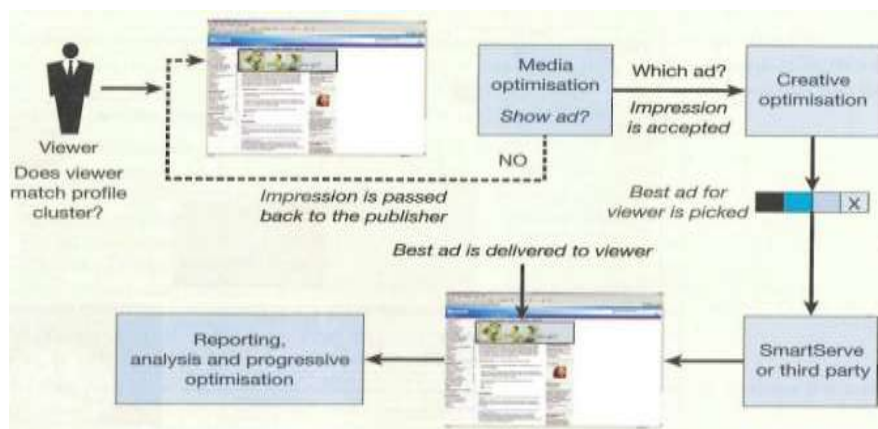

Figure 1Behavioural ad targeting process
(Chaffey &Chadwick 2012, p.525).

Further, behavioural targeting is tracking users by using 'cookies' on an individual shopper's computer and recording a visiting surfer (Alreck & Settle 2007). For instance, when a user visits a travel website to search for a flight ticket, hotel or holiday package, this assume that the surfer is interested in or is looking for products related to a particular destination. So, when a surfer is visiting other websites, the surfer might see advertising for the promotion of a package holiday. In 2010,behavioural targeting became

available through Google's Adwords platform, which allows many advertisers to advertise their ads (Chaffey &Chadwick 2012).

This study is based on the study of what influences the effectiveness of online advertising using randomized 2,892 distinct web adverting campaigns that were placed on different website. [The studies for contextually targeted advertising define a product as something that matches the website where it is displayed, e.g. a banner ad for a cruise would be displayed on the travel and leisure website.] High visibility or obtrusive advertising includes pop-up, pop-under, full page banner ad and floating ad. The results found that the obstructive or highly visible online advertising and context-based online advertising work well independently and appeared to fail when combined; these two strategies are ineffective in this case. These negative results appeared to be related to privacy concerns due to the products being potentially more likely to be an invasion of private, as people are concerned about privacy. This is because the results showed strongest for people who refused to give their income and for categories where privacy matters most. The research suggested that the ineffectiveness of combining contextual targeting and obtrusiveness in advertising is motivated by consumer's perceptions of privacy (Goldfarb &Tucker 2011b).

2.3 Factors that influence consumer's perception of online advertising

The most crucial concern for internet advertising is measuring the effectiveness of the online advertising, such as how many people click through a particular web ad, the demographic characteristics of these people, what actions influence the following click through or site visits. In this part, the research examines the online behavioural targeting advertising effectiveness by measuring consumer perceptions and culture, targeted visible ads, advertisement characteristics and privacy concerns.

2.3.1 Perception

Perception refers to the process where an individual selects, organises and evaluates stimuli from the external environment to give meaningful experiences for him or herself. Selective perception means people only focus on a certain style of their environment to the exclusion of others. This selective perception phenomenon has great consequences for advertising. Consumers are becoming more selective in what receives their attention. Culture reinforces this selective process. The advertising value needs to match those of the culture of the receiver; if the advertising value does not match those of the culture, it will be less noted and less effective (Mooij 2010, p.50).

2.3.2 Belief and Culture

Culture is defined as the way people live according to what they learned, their behaviour patterns, attitudes and material possessions (Hall 1997). As online advertising also influences by customers belief, marketers need to understand the differences in consumer behaviour across countries. This is an important indicator of international marketing and advertising effectiveness (Mooij 2010). These beliefs can be classified into two categories, which are labeled as personal use, including product information, social role, image and pleasure. Secondly, the social effect includes [no sense, well for the economy and materialism]. Advertising is also influenced by culture. This can be explained by the consumer's cultural background, which has an impact on their attitudes and beliefs (Singh &Dalal 1999; Mooij 2010).

The differences within cross-culture contexts are influenced by many factors, such as consumer socialisation (Bush et al. 1999), attention on advertising in different media, perceived level of advertising exposure (Yoon et al. 1996) and the patterns of online advertisement(Burns &Lutz 2006). An and Kim (2008) suggested that the major difference in culture values between East-Asian and Western cultures influenced individual's ideas, attitude and behaviour. The perceptions of online advertising varies, therefore, international advertisers need to achieve a level of cultural understanding when communicating with consumers from different cultural backgrounds.

2.3.3 Visible ads and its Effectiveness

Although online behavioural targeting displays advertisements according to consumer interest, the display ads also can be in different formats such as banner, pop-up ads and interactive ads. According to a study by telecom company Orange (2006), advertising formats also vary across countries, for instance, in the UK; all the ads formats were acceptable. In Spain, rich media ads, such as flash and video are

effective and the citizens do not mind the intrusion. However, in Germany, people accept less intrusion, and, for the Dutch consumer, less intrusive and a smaller size is better (Moil 2010). Display advertisements achieve brand awareness by encouraging a click through to a target site (Chaffey & Chadwick 2012). Indeed, different advertising formats vary in terms of ads effectiveness.

2.3.4 Advertisement Characteristics

In any advertisement format, various techniques can be implemented to increase the advertisement characteristics. Advertisements also have various characteristics such as size, format, content and design (Manchanda et al. 2006). Hoffman and Novak (1996) predicted that advertisements with messages embedded with creative, enjoyable and interactive presentations represent the future of online advertising. One of the eye-catching characteristics of online advertising lies on its multimedia capabilities, which entertain the viewers and add more value to the advertised products or services.

Additionally, advertising credibility is also crucial to determine the effectiveness of the advertising. Credibility refers to the objective and subjective components of the believability of the message (Yaakop 2013). Advertising credibility refers to customers believing or trusting in the media and advertising. Although some consumers are not comfortable with online advertisement, most of the young generation, such as students, prefers to shop online the most (Moore &Rodgers 2005).

2.3.5 Privacy

Privacy is crucial and deals with the human rights of the modern age (Rotenberg 2000). Privacy varies in different contexts. In this case, privacy is defined as personal information management, personal autonomy, individual secrecy and protected access to places and bodies (Kemp & Moore 2006).

2.3.5.1 Privacy on websites

Internet privacy issues rise with the increasing volume of commerce transacted online. Nowadays, privacy concerns between buyers and sellers have become more common (Eastlick et al.2006). Most of the firms gather information from Internet searches and consumer purchases. Thus, consumers distrust how data and their personal information are collected, how it will be used and who has been given access to it (Rapp et al. 2009).

2.3.5.2 Privacy on social networking sites

Privacy has been one of the issues in social networking sites. This is because users share their information, such as their images, status, workplace information and hobbies. Social networking is embraced in youth culture and many share their personal information on these sites with the public. Additionally, social networks advertising became popular with the development of Facebook, MySpace and LinkedIn (Yang et al. 2006). So far, advertising on social networking sites has not been successful, unlike traditional advertising, because members of social media both consume and supply content. According to Hadija et al. (2012), research on users of online social networks understands how advertisements are perceived and found that those users on social networks do not notice advertisements.

2.4 Research Strategy

Research is done to answer questions posed by theoretical considerations. However, researchers need to consider the view of theory that occurs after the collection and analysis of some or all of the data related with a project.

In this research, a quantitative methodology is employed. The research aims to investigate the effectiveness of online behavioural targeting. In order to measure the effectiveness of the behavioural targeting the research needs to examine people's perceptions and attitudes of online advertising, effectiveness and of online behavioral targeting in different forms and the appropriate way to display online advertising.

2.4.1 Model and hypotheses development

Based on the review of the literature, the proposed model has been developed as shown in Figure 2.1. The model shows the factors that affect the effectiveness of the online behavioural targeting advertising which are perception on online targeted ad, privacy concerns, targeted visible advertising and advertising characteristics. The following hypotheses are generated.
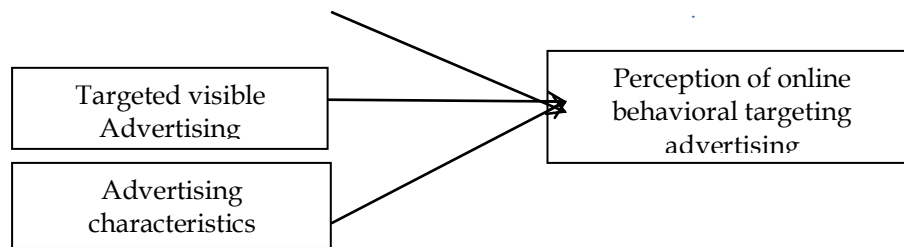
Privacy concerns
-Location to display targeted

Figure 2 The proposed model of online behavioural targeting effectiveness

Hypothesis 1: The perception of behavioral targeted advertising does not vary between Europeans and Asians.

Hypothesis 2: The privacy concern on behavioral targeted advertising does not vary between Europeans and Asians.

Hypothesis 3: There are no relationships between consumer perception and privacy concerns.

Hypothesis 4: There are no relationships between perception, privacy concerns and targeted visible ads.

Hypothesis 5: There are no relationships between perception, visible ads and ad characteristics.

Hypothesis 6: There are no differences in privacy concerns across different locations and sites, e.g. websites and social networking sites.

Hypothesis 7: Privacy concern, targeted visible ad and ad characteristic do not affect the viewer's perception.

2.5 Research design

This study falls into the category of cross-sectional research design and uses survey research. The data were collected using questionnaire instrument. This method allows for a data connection with two or more variables in order to detect the patterns of association. This study investigates the connection variables between people's perceptions towards online behavioural targeting, privacy and advertising characteristics and targeted visible ads.

2.6 Questionnaire Design

The research is based on primary data and uses a quantitative method. Primary data is collected in this research by using self-completing questionnaire. A self-completing questionnaire enables respondents to complete the questionnaire themselves. The self-completing questionnaire must be easy to follow and the particular questions must also be easy to answer. A self-completing questionnaire has a number of advantages. Firstly, it is cheap to be geographically widely dispersed. Self- completing questionnaire also can be sent out by post, email and social networking. This allows large quantities of questionnaires to be distributed at the same time and it is convenient for respondents to complete the questionnaire when they want and to give them more time. However, it also has disadvantages that need to considered, because there is no one present to help respondents if they have difficulty in answering the questions. A long questionnaire is unlikely to be feasible and the researchers cannot ask some of the questions that are not salient to respondents.

2.6.1 Validity and reliability

Validity in quantitative research indicates the ability of the questionnaire to measure what the research aims to measure. There are three forms of validity: firstly, content validity refers to the measurement in the questionnaire to provide sufficient coverage of investigation questions. Next is predictive or criterion-related validity, which is concerned with the abilities to measure the questions in order to make an accurate prediction. Lastly, construct validity refers to the capacity of items to measure hypothetical constructs or concepts.

Reliability refers to consistency in ensuring that the questionnaire is valid and must be reliable (Bryman& Cramer 2013). Cronbach's alpha analysis was used in this study to verify the reliability of the scale in this study.

2.6.2 Pilot Test

This research has done pilot studies to ensure that the questionnaire functions well and is easy to understand by respondents. For this purpose, the pilot testing of eights university students was chosen randomly and based upon how well the questionnaire was structured and feedback on their understanding of the questions.

2.7 Methods
2.7.1 Sampling

For the purpose of the studies, 300 questionnaires were distributed due to the limitation of time. The questionnaires were distributed at the library of Brunel University, London, UK, to the students by hand. The sample of participants in this study was not selected completely at random. This is because the questionnaire was distributed among the students who attended the library during the week of this researcher's data collection. The participants are internet users who are18 year old and above.

The data were gathered from 141 students. The responses rate was 47%. The data was collected for one week.

2.7.2 Measurement

The survey instrument has four parts or categories: (1) Perception of online behavioral targeting, (2) visible ad contents using behavioural targeting, (3) privacy concerns and (4) advertisement characteristics. The questions use a five-point Likert-type scale where: 1 = Strongly Agree, 2 = Agree, 3 =Neutral, 4 = Disagree and 5= Strongly Disagree. Whereas, for advertisement characteristics, the questions using a five-point Likert-type scale were: 1 = Most Likely, 2 = Likely, 3= Neutral, 4= Less Likely and 5 = Not at all.

3Discussion

The results show that consumers agree with online behavioural targeting. Consumers prefer to receive the advertising that provides more relevant information, such as the promotion of the products and services related to their interests. However, consumers still consider online advertising as being annoying and visible ads are obtrusive. In fact, the results show that consumers agree that targeted visible ads are less annoying and more favourable options. They also agree that this advertisement format will increase their purchase intention and ad recall.

Nevertheless, privacy concerns are salient in online behavioural targeting advertising. Consumers agree that targeting their behaviour this way is intrusive of their privacy. Based on the results, there are no differences in term of perception on behavioural targeting between European and Asian people. Further, European and Asian people have the same level of privacy concerns. According to Goldfarb and Tucker (2011a),online advertising became less effective in Europe after the privacy policy law was enacted, but there was no change for countries outside Europe. Furthermore, the result found that Asian consumers are also aware and have privacy concerns in terms of the intrusion of their privacy as well. Moreover, the results show that there is a negative relationship between perception and privacy concern in online behavioural targeting. This shows that a more positive perception of targeted advertising leads to less privacy concerns. In other words, when privacy is the main concern, consumers will be more aware of how online behavioural targeting tracks their past browsing behaviour. According to the FTC (2010), when the consumer has no idea that information is collected, the consumer might be at risk. Moreover, unregulated data collection might harm the consumer. This research confirms that privacy concerns influence the perception towards online behavioural targeting (Shimps 2010; Goldfarb &Tucker 2011a).

The results found that there is positive relationship between perception and visible ads. The positive perception of online behavioural targeting advertising will lead to an increase in the click-through rate of targeted visible ads. This is because the targeted visible ads are less obtrusive and more favourable. The results also suggest that consumers prefer the contextually targeted ad more than other formats of the advertisement. This result supports the previous study by Goldfarb and Tucker (2011c), who found consumers are more willing to accept the contextually targeted ads more than other type of targeted ads because of the potential information.Moreover, the results show that targeted visible ads and privacy concerns have negative relationships. Consumers tend to be less restrictive in their privacy concerns when they have positive perceptions of the targeted visible ads.

Furthermore, advertisement characteristics have a positive relationship with targeted visible ads. The advertisement with good characteristics increases the targeted visible ad's effectiveness. This result confirms previous studies, which found that advertisements must represent an enjoyable context and also visible ads formats should be more eyes-catching (Shimp 2010).

The results also suggest a positive relationship between advertisement characteristics and perception. According to the results, consumers prefer to click on the ad with pictures of the products and multimedia. Hoffman and Novak (1985) found that the messages with creative and entertaining context will represent the future of internet advertising. The attitude toward internet advertising also will be improved with beauty, motivating and enjoyable designs and attractiveness to users (Schlosser &Kanfer 1999;Wolin et al. 2002). Besides that, the results suggest that consumers are most likely click on the advertisement and purchase the products based on the ads' contents and its credibility. The results supported by Yaakop (2013) suggest that contents and credibility have positive impacts on attitude toward online advertising.

In term of the location to display the advertising, the results show that consumers have the same level of privacy concerns on ads either displayed on a website or on a social networking site. According to Cranor et al. (2000), individuals are more likely to share their personal information with the websites that have a privacy policy. Websites that have cookies tracking the customer behaviour are required to provide terms and condition and a privacy policy for consumers. There are also privacy concerns on social networking sites because consumer shares their personal details, images and their status on these sites.

Overall, based on the conceptual model of privacy concerns, targeted visible ads and advertisement characteristics have an impact on the consumers' perceptions of online behavioural targeting. These determinants affect the effectiveness of the online behavioural advertising. Firstly, the privacy and intrusiveness are the most sensitive issues on behavioural targeting. Thus, prevention may increase the sensitivity of the intention to manipulate the targeted ad. Secondly, targeted visible ads combined with the advertisement characteristics such as design; trustworthy contents and credibility increase the positive perception of the online behavioural targeting advertising. Hence, online behavioural targeting that only advertise the products and services that match with consumer interest in the format of targeted visible ads will improve the effectiveness of the online behavioural advertising

4 Future research and recommendations

Future researches can further investigate how privacy concerns on behavioural targeting can be improved on websites and social networking sites. The effectiveness of online behavioural targeting in different culture contexts also can focus on advertising messaging. Furthermore, further research on online behavioural targeting advertising can be done on specific products or industries, such as the travel industry. This is because the travel industry, such as airline and hotel booking sites, mostly posted their advertisement online and usually targeted consumer behaviour. Besides that, further studies on the online behavioural targeting advertising in emerging market countries such as China, India and Turkey can also be challenging, because of the different privacy policy and communication technology penetration risks.

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