Location-Based Services & Advertising

Measuring the effectiveness of personalized services and advertising in mobile marketing through location tracking

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Abstract

With the widely-spread market penetration of mobile smartphones in the world as of 2017, the global marketing and communication industry's interest in making use of this development is rising. Despite the literature on mobile marketing and advertising and the increasing number of organizations investing in this instrument, there is little academic research on the possibilities that the 'mobile consumer world' offers. Furthermore, the application of specific marketing methods through mobile phones are not yet fully understood. This research aims at finding whether Location-Based Services can be successful in informing consumers, using a mobile phone as the communication tool. The theoretical background of these 'Location-Based Services' was tested through a survey, which mainly focusses on aspects regarding the intention to use mobile advertising. The practical implications of this tool were tested by executing a field experiment, in which multiple forms of Location-Based Services and Location-Based Advertising were tested in order to examine the effects of these methods. This study found that the marketing method of Location-Based Services could pose as an effective tool for organizations. Offering consumers real-time information regarding products, discounts or events happening at their location, while they are in a store, like LBS does, leads to positive results on factors like consumer attendance to a specific store area and the revenue of a featured product. By adding a price promotion to this equation, its potential success could be enhanced further. Furthermore, this study found that consumers think of mobile communication and marketing as a useful added aspect of an organization and that it contributes to a positive shopping experience. Despite the positive results of this marketing tool, organizations should be cautious when implementing this tool, taking into account the privacy risks and consumers' perceived intrusiveness that might pose as a threat to the success.

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1 Introduction

Since its introduction, the adoption and popularity of mobile marketing in corporate settings has consistently grown. Mobile marketing is now able to implement Location-Based Services (LBS) and Location-Based Advertising (LBA). This new addition to mobile marketing uses the current location of a device (through its GPS or Wi-Fi signal) in order to deliver location specific information to consumers.

In March 2016, an article in Forbes (2016) reported that Location-Based marketing is fast becoming essential to organizations to remain competitive. People expect companies, especially large stores and multinationals, to engage in online and mobile marketing. This article goes as far as calling nowadays consumers a new generation of mobile dependent consumers with very high demands of organization. Are organizations ready for this new form of marketing and are they willing to take the leap in order to benefit from its potential success?

When technology development in the area online marketing was uprising, a Forrester Research Report (Lussanet, Nordan, Koivu, Bedarida, & Roitman, 2001) reported on the worries companies expressed on committing to this new type of media marketing. In this study, the fear of organizations thinking consumers would see this as an invasion of their privacy (80%) and the fear of a negative consumer reaction (60%) were considered disadvantages of this new marketing method. This does not mean however that consumers feel the same way regarding these disadvantages. The potential consumer concerns, feared by organizations, were refuted by a comprehensive study concerning consumers experience with direct marketing channels such as mobile and online (Heinonen & Strandvik, 2006). The study showed that 80% of respondents had an overall positive experience with these marketing channels. This does not mean however that privacy is not a concern for consumers and no improvements should be made to increase the usability for both marketers and consumers.

LBS provide the possibility to deliver highly personalized notifications to the liking of every individual consumer. Through mobile marketing the notifications a person receives could be altered to consumer desires and therefore be perceived as less intrusive. This new marketing method makes it possible for a consumer to select whether he/she wishes to receive a message with a sound notification or just a vibration when a notification is received. The consumers can alter these settings themselves by altering these aspects in their phone. Apart from this feature, mobile marketing can offer many more features based on consumer needs. It can for instance display product information when scanning a barcode, searching for a product category location in a large retail store or display the credit on a customer loyalty card (Singhal & Shukla, 2012), which in turn could be beneficial for organizations due to the increased (relevant) information deliverance to their consumers and new marketing possibilities.

Mobile marketing can thus be implemented by organizations for several reasons. It makes it possible to provide service to consumers in or around a specific store, like informing them in relation to products or interesting places in the store and can overall contribute to their shopping experience, known as the core of Location-Based Services. Another reason for implementing Location-Based Services is for marketing purposes. On the one hand, it can help organizations to increase sales and on the other hand it can provide consumers with (financial) benefits. The marketing side of the LBS spectrum is often referred

to as Location-Based Advertising. Location-Based Advertising could be beneficial to organizations and was therefore part of this research study.

This research aims at finding whether LBA can be successful in informing consumers, using a mobile phone as the communication tool. Furthermore, the study aims at finding whether it has the potential to improve the overall shopping experience of consumers. Also, the effects of adding a marketing component to this communication tool were examined. This was done in order to assess whether this leads to an increase in response to stimulus material provided through LBS, a sales increase and the overall experience consumers perceive. A field experiment was conducted to study the impact of LBA and LBS on consumer behavior measured by sales and attendance.

This experiment consisted of a 2x2 experimental design. The four situations of the experiment were: an informational stimulus (LBS), a price promotion stimulus (LBA), a premium promotion stimulus (LBA) and a combination of the price and premium promotion stimulus (LBA). These conditions were based on literature and the pre-test that was performed in this research. These stimulus situations were all be compared to a baseline measurement, in order to measure their effects and success. The baseline measurement consisted of past year's (2016) figures in sales both in turnover amount and the amount of receipts.

The main research question of the experiment in this research study was: Can LBS and LBA be effective communication/marketing tools for organizations?

To assess the overall opinion that consumers have regarding to mobile marketing and Location-Based Services/Advertising, a survey was conducted in this research study as well. This survey aimed at reporting consumers' opinion in regard to this new communication/marketing tool. The survey included measures based on the found literature, which are: Intentions to use Mobile Advertising, Attitude Towards Mobile Marketing, Information Influence, Irritation/Intrusiveness, Personalization Benefits, Locatability Benefits, Risk Beliefs, Privacy Concerns and Coupon Proneness. The main research question for the survey in this research study was: Do consumers feel mobile marketing (including LBS and LBA) is a positive addition to their shopping experience or do they see it as a risky and privacy invading marketing tool?

2 Theoretical Framework

The implementation of Location-Based Services/Advertising within organizations is still in an early stage. Therefore, there is a shortage of empirical literature on this topic. The current theoretical framework aims at examining the known effects of LBS and LBA and wishes to predict the effects of the experiment and survey performed in this research. This was done by consulting studies on (mobile) marketing and aspects of LBS/LBA like coupons and other forms of direct advertising.

In this theoretical framework, the service aspect of LBS has been described first (2.1) followed by the marketing aspect Location-Based Advertising (2.2) as a third chapter the strategies in Location-Based Services (2.3) are being discussed, followed by the subject of information sensitivity that has been explained (2.4) finally, the moderating variables that could influence this marketing method are shortly discussed.

2.1 Location-Based Services

Mobile phones are quickly becoming one of the most used electronic devices in consumers' everyday lives. People nowadays seem to be unable to live without this gadget. It is the way people stay connected and it is seen as an extension of the self for many people (Butt & Phillips, 2008; Wilska, 2003). The upcoming and extensive use of this technology offers some unique and great opportunities for marketers. It offers the possibility to reach any person, anywhere, at any time. It offers the potential to organizations to connect with and communicate to consumers at times when the information is most relevant.
Massive integration of mobile phone usage by consumers provides organizations with the benefits and abilities of personalizing and timing content much more effective than before. The most common way of tracking people through their mobile phone is by GPS (Global Positioning System), which the vast majority of mobile phones is equipped with. This service offers many possibilities to consumers like finding hotspots, navigation or receiving information on routing by public transportation. On the other hand, it could also be used for marketing and offering service to consumers by organizations.

Location-Based Services can be described as a service that integrates the use of the specific location of a mobile device to provide consumers with marketing (or purely service) information to add value to the consumers' experience with the corresponding product, brand or organization of the supplier of the LBS (C. Bauer & Strauss, 2016). The goal of these real-time information is to expose consumers to personalized (marketing) content when it is most relevant for them and they were most likely to see this form of promotion (Oliver, Rust, & Varki, 1998). Location-Based Services can be divided in two main pathways: the service route and the advertising route (Location-Based Advertising).

Thanks to the widely-spread use of smartphones which have several different mechanisms to track people like GPS, Wi-Fi, mobile internet, Bluetooth, etc. tracking people has become easier and more relevant for marketing purposes. A study executed by Marketingfacts (2015) in the Netherlands found that 81 percent of the Dutch population between the age of 18 and 80 years old uses a smartphone on a daily basis. Earlier literature stated the role of distance in social and economic behavior (Tobler, 1970). It stated that "all things are related, yet near things are more related than far things", forming a solid advantage for mobile marketing as it is a way of near communication/marketing. The world

of online marketing people live in thanks to the invention of the internet forms a revolution that already took away part of the distance barrier. Nowadays, it is much easier for organizations to communicate to consumers on a large and on an individual scale through the internet. It has also become much easier for consumers to communicate to organizations, that could be on the other side of the world, this way. Popular press releases frequently emphasized the internet's ability to bring the "Death of Distance" (Cairncross, 1997) or a "Flat World" (Friedman, 2005). Mobile marketing and LBS are viewed as the next step in this developing marketing environment thanks to its ability to deliver more relevant advertising based on the targeted individual's location. A study on LBS by Persuad and Azhar (2012) found that (as for traditional marketing) the shopping style, brand trust and value are key motivations for engaging in mobile marketing. They also suggest a further study on how to engage customers with mobile marketing and real-life situations to see what works and what does not.

The literature on Location-Based Services has expanded over the past years, due to the increased usability of this marketing method. Over the past years a few empirical studies on this topic have been published which describe the field and offer insights in the success and possibilities of this marketing tool. The first real information on this topic started coming in the early 2000's describing this 'new' phenomenon and seeing the benefits it could bring when it could be implemented by companies to reach consumers on a large scale (Rao & Minakakis, 2003; Ververidis & Polyzos, 2002). Over the last 5-7 years' smartphone adoption has taken a major leap as well as the literature and studies on this topic. The possibilities and benefits of this marketing method are becoming more clear and successful real-life implementation of this technology is now a (marketing) possibility for organizations (Dhar & Varshney, 2011; Shankar, Venkatesh, Hofacker, & Naik, 2010).

Overall this development in the field of marketing means the distance between a company's marketing and the receiving consumers decreases. It is easier to target the (right) consumers, communicate to them at the right time in a relevant place and on a more personalized level than was possible before with more traditional marketing methods. These advantages form the main reason LBA is such an interesting marketing method and has potential to be a successful marketing tool (Junglas & Watson, 2008; Phillips et al., 2010; Schiller & Voisard, 2004). The advertising methods that are closely related to Location-Based Services are the use of location marketing. For instance, placing billboards close to a shop with directions on how to arrive there, to present two examples of this: 'turn right in 200m for our Garden Store' or employees handing out flyers in a busy shopping street offering 10% discount to a nearby clothing store. This is also a way of location advertising although it is not as selective as LBS, it is more intrusive and does not provide the flexibility this new way of mobile marketing offers, or can offer to any person at any given time when is right and relevant for them (Scharl, Dickinger, & Murphy, 2005; Shankar et al., 2010).

2.2 Location-Based Advertising

Location-Based Services can be used with an advertising purpose. In this chapter, a focus on Location-Based Advertising was applied and the function of this new type of medium is explained. Location-Based Services are a new way for organizations to reach their target group, it offers many advantages to traditional marketing and can serve as a great tool for communicating with consumers and offering personalized marketing offers (Persaud & Azhar, 2012). The benefits that LBS can offer to consumers are mostly convenience. It is fast

and relevant to their location and therefore also likely to meet their needs at that time and place (Carroll, Barnes, & Scornavacca, 2005). It does not require any action from consumers themselves apart from maybe downloading an app or configuring their phone. The addition of an advertising aspect to Location-Based Services could lead to further improvements of the benefits consumers experience while being confronted with this form of mobile services/marketing. Advertising by confronting the consumers with a beneficial offer like a price discount or free gift could improve their experience with LBS and also increase the chance of success (Gotlieb & Sarel, 1991; Lavidge & Steiner, 1961).

Location-Based Advertising works differently from Location-Based Services. LBA could be used as an addition to LBS, in order to further improve LBS and (for organizational benefit) increase the sales of consumers visiting a certain area or store. The most commonly used types of advertising promotions are price promotions and premium promotions (a free gift) according to literature (Palazon & Delgado-Ballester, 2009; Yi & Yoo, 2011). The danger lies in the intrusiveness and annoyance of Location-Based Advertising (Monk, Carroll, Parker, & Blythe, 2004). While the organizations may see it as a relevant service, the consumer might think of it as unwanted or intrusive and can even experience a feeling of the organization invading on their privacy or personal space (Watson, McCarthy, & Rowley, 2013). This type of "forced exposure" could cause psychological reactance in consumers that is unwanted (Edwards, Li, & Lee, 2002). The way LBA is most used, is by making use of a pop-up on consumer' mobile phone when they enter a certain geographical location. For instance, when a consumer is in a shopping district walking by a coffee shop, a pop-up appears reading a message: 'come get a coffee at Starbucks and receive the second cup on the house'. The consumer receives this LBS content via a vibrating/sound notification on their phone. The next step in this process is for the consumer to decide whether to act on this offer. A consumer must be open to this and be willing to share their personal information in return for an offer based on their location that could be of added value to them. This is considered as a crucial factor to the potential success of mobile marketing (Scharl et al., 2005).

2.3 Consumer Intention to use Mobile Marketing

Mobile marketing contains many factors that also play a role in traditional marketing. Since the phenomenon of mobile marketing, especially with location-based possibilities, is fairly new, the literature on it is scarce. Due to this fact, the factors that influence overall marketing methods have been researched as well to see what their influence is on LBS and mobile marketing. The most important factor that organizations wish to know in this time is whether the consumers have the intention to use mobile marketing.

According to Bauer, Reichard and Barnes (2005) the intention to use mobile advertising is influenced by multiple factors. First off, the overall attitude towards mobile advertising plays an important role. Furthermore, the perceived relevance of the information that mobile advertising can provide is important. Lastly, they describe the importance of minimizing risk beliefs and privacy concerns in consumers.

Consumers' attitude towards mobile marketing is the first factor that could influence the intention to use mobile marketing. Bauer, et al. (2005) describe this as is one of the major factors in predicting the intention to use mobile marketing. According to them people with a positive attitude towards mobile marketing display information seeking-behavior and are more likely to also have the intention to use mobile services/marketing.

The second factor often mentioned in literature on mobile marketing is Information Influence (Altuna & Konuk, 2009; Tsang, Ho, & Liang, 2004). The information that a mobile application delivers to a consumer, and its perceived Information Influence by the user is a factor that can influence the opinion and attitude towards mobile marketing and its applications. This construct has many previous applications to assess the overall opinion towards mobile marketing at their respective times in the field of marketing research. For example, the construct of information influence is supported in multiple studies like the two studies mentioned before of Altuna & Konuk (2009) and Tsang, et al (2004).

The benefits that are specific to mobile marketing and LBS have also been described in literature. Two of the most important benefits of LBS/LBA compared to traditional marketing are the personalization benefits and the locatability benefits. Mobile marketing creates possibilities to further personalize messages to consumers and provide them with relevant information at the right time. There are many studies on the effect of relevant information on sales that state that these factors are related and relevant information has a positive influence on sales (Chen, Wu, & Yoon, 2004; Gurbaxani & Whang, 1991; Nelson, 1974).

The locatability benefits by a phone through GPS amplifies this by knowing where the consumer is and when he/she would like to receive his personalized message. Research states that personalization (Chellappa & Sin, 2005; Mittal & Lassar, 1996) and locatability (Xu, Teo, Tan, & Agarwal, 2009) could be significant influencers of the attitude towards mobile marketing and LBS.

As with every marketing method there are threats that could possible negatively influence consumers' intentions to make use of mobile services and marketing. One of these factors is the risk beliefs that live in consumers (Malhotra, Kim, & Agarwal, 2004b) a construct to measure this is was created by Jarvenpaa, Tractinsky & Saarinen (1999), this construct is shown in appendence C of this research. A second factor that could negatively affect a consumer's intention to use LBS/LBA is their privacy concerns. How safe do people feel using mobile marketing regarding the privacy of their information? To accurately measure this a few studies have researched the relation between mobile marketing and privacy concerns (Chellappa & Sin, 2005; Sheng, Nah, & Siau, 2008), a deeper analysis on the literature of this topic is presented later in this paper. The final factor that is seen as a potential negative influencer of the consumers' intentions to use LBS/LBA is the irritation/Intrusiveness (Altuna & Konuk, 2009; Tsang et al., 2004) LBS/LBA could cause.

Survey H1: The higher the attitude towards mobile advertising, the higher intention to use mobile marketing.

Survey H2: The Information Influence consumers perceive contributes positively towards the intention to use mobile marketing.

Survey H3: The perceived irritation/intrusiveness contributes negatively towards the intention to use mobile marketing.

Survey H4: The perceived benefits contribute positively to the intention to use mobile marketing.

Survey H5: The risk beliefs contribute negatively towards the intention to use mobile marketing.

2.4 Information Influence

Organizations tend to gather a massive amount of information regarding their customers and target audience. At this time of internet shopping this is valuable information especially when the link between the online and offline consumer can be made. Many companies go by a strategy of "Data = Power". Most of the online monitoring of people's shopping behavior by organizations goes unnoticed by consumers. The premises of LBS and LBA are based on personalized advertising that use consumer's current geographical location. In order to be able to deliver this service, the consumer has to agree on sharing this information with the organization. In order to take the next step in LBS it is crucial the consumer is willing to provide his/her location in order to receive the benefits of LBS and LBA. Only then will the organization be able to combine this data with consumer preferences and personalized accurate marketing information (Unni & Harmon, 2007).

Researchers Phelps, Nowak & Ferrell (2000) examined the potential relationship between categories of personal information, beliefs regarding direct marketing, situational characteristics, specific privacy concerns and consumer's direct marketing shopping habits. They also assessed a trade-off principle on which level consumers are willing to exchange personal information for shopping benefits. They found that in order for the consumer to share personal information he/she must (feel like he/she) has some form of control on what he/she shares. LBS is seen as a self-regulatory way of controlling the gathering of information, because consumers have control over what they do and what they do not share. Subsequently the organization must consider the type of information that is sought, because consumer concern and willingness to provide information to marketers with personal data vary dramatically by information type. Consumers' main concerns are thought to revolve around sharing personal data like names, addresses, demographic characteristics and purchase histories. Therefore, the reason for asking this information has to be clear.

Phelps, Nowak & Ferrell (2000) distinguish five types of personal information that are most commonly requested by organizations. These are: demographic data, lifestyle interests, media habits, personal identification data (name, address phone number, etc.) and financial data (salary, bank account balance, etc.). The study results demonstrated that consumers are most willing to provide marketers with demographic and lifestyle information and are least willing to provide financial information and personal identification data.

Lastly, in a study on adoption of innovations (Rogers Everett, 1995) it was found that adoption of an innovation was dependent on a person's characteristics. For example, a higher age correlated to lower scores on personal innovativeness. It also found that men score higher on personal innovativeness and perceive findings as more positive than women. Women, on the other hand, look at findings in a more rational way. Also, female participants of the study considered the risks and drawbacks more than men**.** This study therefore leads to believe that men have a higher intention to use mobile marketing than women**.** Finally, people with higher education evaluate findings more than others and for the innovation of LBS can lead to significant benefits and positively influence the shopping experience it is believed that higher educated people experience higher perceived benefits of this technology.

2.5 Teaser influence

It is important to provide a teaser. An informational service aims strictly at informing people of an event or interesting detail in a store, the addition of a teaser to this service like a price or premium promotion could increase consumers' response to this form of message. A study on SMS (Chou & Lien, 2014) advertising demonstrated that a teaser increased product curiosity especially in well-known brands. For consumers who were favorable to receiving SMS advertising a spokesperson could reduce or increase interest for less familiar brands, the addition of a spokesperson did not influence people with less favorable attitudes towards SMS. All in all, studies found that a teaser could be beneficial when used in the right form on the right type of consumers. An even more positive effect could be reached if the message was relevant and triggered familiarity with the brand or product (Chou & Lien, 2014; Deighton & Grayson, 1995; Peng & Spencer, 2006).

2.6 Coupon proneness

Consumers respond in different ways to receiving coupons. An example of this is often displayed in busy shopping streets where consumers are confronted flyers being handed out. People that fall into the category of 'value seekers' are people who are actively searching for promotions and feel a sense of accomplishment if money was saved or a free gift was received (Dickinger & Kleijnen, 2008). This category of consumers who are prone to coupons might also be more open towards LBS and LBA and see it as more beneficial. On the other hand, the study by Dickinger and Kleijnen (2008) also illustrated that consumers that are more open to receiving coupons also have a fear of spam and could possibly experience a lack of control in receiving offerings like LBS advertising. So, in fact this is a double-edged sword for these people; they search and collect coupons and are prone to advertising messages, yet their value proneness may be undermined by their fear of spam and their feelings of lack of control over receiving these messages. Overall the value of a coupon/promotion is determined by the perceived value and the perceived benefits of that promotion (Bawa, Srinivasan, & Srivastava, 1997; Lichtenstein, Netemeyer, & Burton, 1990).

2.7 Consumer privacy concerns

Among marketers the trend of personal marketing is becoming increasingly popular as it is a proven method to influence consumers and increase sales (among others). However, more and more consumers show uncertainty regarding their privacy as a result of these personalized methods. Wilson (2012) describes this phenomenon and calls it the 'location-aware future'. In the 'location-aware future' consumers are constantly aware of their location and that they could be monitored where they are through camera's, their phones and other electronic devices. Technologies like Location-Based Services enable, demand, and reward consumptive motilities. As such, LBS are anticipatory technologies (Kinsley, 2010; Anderson, 2010). They need the cooperation of people to allow them to see their location and use this information to provide marketing and services to these people. Without the collaboration and accordance with LBS from the consumers it was nog going to work. (Theodorakopoulos, Shokri, Troncoso, Hubaux, & Le Boudec, 2014). Thanks to the use of mobile LBS, marketing can be made more personalized and timed to the context. For instance, when a consumer is entering a store. However, in order to unlock the full potential of mobile LBS (and for that fact any form of

personalized marketing) the consumer has to conform with the use of marketing and be comfortable to provide their personal information (in this case their location via their smartphone). For this simple reason LBS could form privacy threats that differ from those of traditional marketing. This phenomenon was described in an early stage by Malhortra, Kim & Argawal (2004b). Their study described a concern in internet users for collection of their personal information, the control the users have over the information that is collected and for which purposes this information will be used. The degree of danger of this varies upon these variables and how they are handled by an organization. Studies found that consumers that care greatly about their privacy are less likely to react positively and engage in personalized offerings compared to consumers with less privacy concerns. Consumers with higher levels of privacy concern are more skeptical of LBS and are less receptive to the possible benefits of this personalized marketing (Han & Maclaurin, 2002; Ward, Bridges, & Chitty, 2005; Xu, Luo, Carroll, & Rosson, 2011).

Survey H6: The privacy concerns contribute negatively towards the intention to use mobile marketing.

Survey H7: The coupon proneness contributes positively towards the intention to use mobile marketing.

Survey H8: The higher a consumers' age the lower the intention to use mobile marketing.

Survey H9: Men perceive the benefits of mobile advertising as higher than women.

Survey H10: Women have higher risk beliefs towards mobile marketing than men.

Survey H11: Men have a higher intention to use mobile marketing apps than women.

Survey H12: The higher a consumers' education the higher the perceived benefits of mobile marketing.

2.8 Research Model - Study 1

For the theoretical study (hereafter called study 1) the following research model has been created (figure 2). As stated in theoretical framework and the hypotheses this model was constructed to test the intention of consumers to use mobile advertising. This factor is supposed to be influenced by: the attitude towards mobile marketing, Information Influence, irritation/intrusiveness, peceived benefits (split up into locatability and personalization benefits), risk beliefs, privacy concerns and coupon proneness. The demographic variables age and gender should also have an effect on the intention to use mobile advertising. Furthermore, the demographic variables gender and education should influence the perceived benefits. Finally gender should infulence the risk beliefs as the theoretical background confirms.

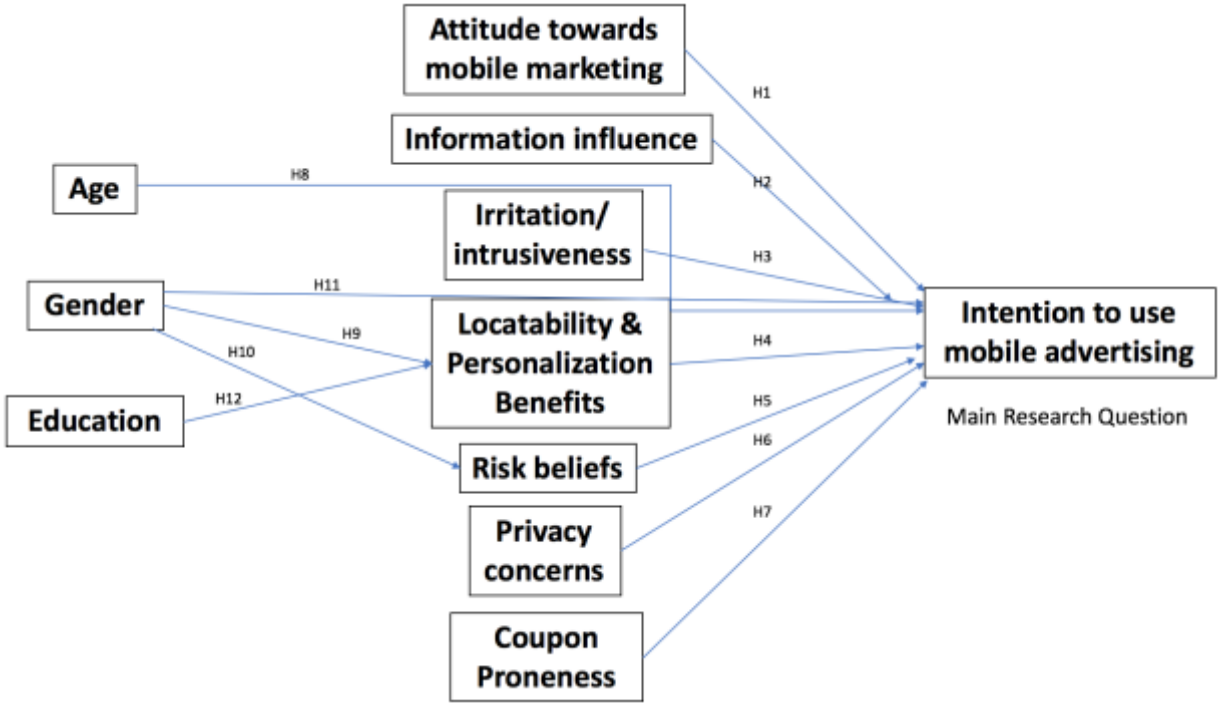

Figure 2 –Research Model Figure – Survey

2.9 Location-Based Services Strategies

In order to deliver high quality personalized content through mobile (location-based) service/marketing, the location information (data) of the targeted consumers has to be clear. This data has to be accessible by the organization that wishes to provide the LBS. Also, it needs to be more or less specific based on the desired goals that wish to be achieved with this information. This type of accuracy of information is important when deciding on a strategy for LBS and LBA. An organization, that wishes to implement a form of LBS, needs to determine whether the chosen form of LBS requires low or high accuracy of location data.

For example, delivering 'location-specific news' requires low accuracy because it is specific to a region and not a relatively small typical location of within 10 meters. For navigation and tracking purposes a higher accuracy is required and the location needs to be more specific (Schiller & Voisard, 2004). Nowadays GPS systems can accurately determine a persons' location on a range of within a few meters most of the time.

Previous studies show the positive effect of LBS compared to traditional marketing. A recent study on the effects of Location-Based Mobile promotion technologies a.k.a. LMP (Luo, Gu, Fang, & Xu, 2013) concludes that LMP had a significant impact compared to traditional marketing. Furthermore, it is believed to trigger spontaneous and impulsive purchases and reactions. The study was done with data covering over 3 million real-world users and demonstrated possible the value of mobile marketing. The study illustrated an immediate positive impact on sales that lasted until the next day and impacted sales even over the next 9 days. LBS can be implemented within an organization in different ways, as has been described in this theoretical framework.

Strategies for Location-Based Services

Informing people locally trough mobile marketing might be an important, innovative and effective new business tool to provide service to customers (Mehta, Chen, & Narasimhan, 2008). One study found that the largest roles of paid, earned and owned media are reminding, informing and enhancing enjoyment (Lovett & Staelin, 2016). As these are respected as the three basic effects a company can achieve with marketing, LBS is predicted to possibly be successful. It can remind the consumers of details when relevant (e.g. entering the store) by sending a message when the consumer is entering a geographical zone. LBS have the ability to inform consumers regarding any current promotions or special events in a store and it could enhance the enjoyment by adding different features to the LBS which provide the service customers desire. This method relies strictly on delivering a service to the consumers and aims at informing them and enhancing their shopping experience. A form of Location-Based Services aimed at informing. Based on the literature discussed in this chapter the following hypotheses have been constructed.

Experiment H1: With the help of Location-Based Services, a retail store can increase the number of consumers visiting an area of a store, by introducing consumers to store activities through mobile phones.

Experiment H2: With the help of Location-Based Services, a retail store can increase the revenue of a specific product (group), by introducing consumers to in-store activities through mobile phones.

Strategies for Location-Bases Advertising

A second use of LBS is the side of Location-Based Advertising. This form of content aims at marketing an aspect (product, brand, etc.) of the organization to the consumers. Examples of this type of content are product recommendations, special offers, special promotions and brand building content. LBA is mostly used to offer special coupons to attract consumers to a nearby location, with the primary goal to increase traffic and ultimately sales. The perceived benefit of this form of promotion could influence a consumer's perception of the marketing method (López-Nicolás, Molina-Castillo, & Bouwman, 2008; Unni & Harmon, 2007). The perception of what he is gaining is stronger than the perceived drawbacks like giving up privacy and personal information like their location being tracked.

These studies distinguished between two main types of LBA. The first are monetary promotions, which are indirectly beneficial, they offer consumers a discount when buying an advertised product (therefore not being directly beneficial but only once a purchase is made). The second are non-monetary promotions this advertising is directly beneficial and are for instance, receiving a gift when reacting to stimulus material. As these are the most used and popular type of promotions (Anselmsson, Johansson, & Persson, 2007; Blattberg & Neslin, 1989; Palazon & Delgado-Ballester, 2009). These two advertising-based promotions were likely to increase the responsiveness to the stimulus material (Chandon, Wansink, & Laurent, 2000). An influential study by Campbell & Diamond (1990) states that there is a significant difference between these two methods and that monetary promotions are viewed as a reduced loss while nonmonetary promotions are viewed as a gain for consumers. This could be due to the effect of a consumer feeling that he/she 'has to' buy a product in order to receive benefit from this promotion, while nonmonetary promotions offer an unforced and free promotion. Despite this finding, the expectation for this research is that a monetary promotion is be more effective as studies have illustrated this in field experimental settings. Palazon & Delgado-Ballester (2009) showed this in their paper on effectiveness of price discounts and premium promotions. They state since price promotions are fairly costly for organizations and at the same time cause unwanted effects in consumers, like an undermined perception of quality, worsened brand equity and reduced consumer reference prices. Therefore, it is crucial to know what type of promotion is the most preferred and valued by consumers. Their research illustrated that at high benefit levels price discounts are more effective than premiums while an opposite effect occurs at low levels. Finally, at moderate levels a similar evaluation of promotional tools was found. When high price discounts are offered, consumers tend to be unlikely to process information extensively as they perceive less uncertainty in regard to the offered deal (Grewal, Marmorstein, & Sharma, 1996).

The form of a premium promotion is viewed as directly beneficial by consumers; a free service is offered even if the consumer decides not to take further action on the promotion. No risks or real effort has to be taken by consumers in order to receive a benefit (Palazon & Delgado-Ballester, 2009). On the other end of the advertising/marketing stimulus material of LBA the price/indirectly beneficial promotion did entail a discount on the marketed products when the consumer acts on the stimulus material of the LBA. This form of promotion is viewed as indirectly beneficial because it can only be beneficial to the consumer when they decide to consent with the offer and buy the marketed product, the benefit would take place when buying the product by receiving a discount for acting on the stimulus material (Palazon & Delgado-Ballester, 2009).Based on the consulted literature in this paragraph, the expectation is that higher perceived benefits are experienced by consumers when an

advertising component is added opposed to an organization strictly providing information through LBS. Furthermore, the perceived benefits in consumers' perspective are expected to be higher when a price promotion is offered as opposed to a premium promotion. Due to the fact that a price promotion is expected to have higher benefit levels to consumers as stated in a study by Palazon & Delgado-Ballester (2009). In contrast, the premium promotion could be viewed by consumers as directly beneficial while a price promotion could be viewed as indirectly beneficial therefore the premium promotion could also perform superiorly (Palazon & Delgado-Ballester, 2009).

The last-mentioned studies and hypothesis also lead to the next hypotheses stating that the perceived risks experienced by consumers regarding LBS (and LBA) are lower when a premium promotion was offered as opposed to a small price promotion. Considering the higher perceived benefits of premium promotions and their ability of lowering consumers' uncertainty and risk beliefs, plus the fact that the premium promotion was directly beneficial in this study as opposed to the price promotion which was only really beneficial when the consumers actually bought a product in the store (Lichtenstein et al., 1990; Palazon & Delgado-Ballester, 2009).

Experiment H3: With the help of Location-Based Advertising, a retail store can increase the number of consumers visiting an area of a store, by introducing consumers to store activities through mobile phones.

Experiment H4: With the help of Location-Based Advertising, a retail store can increase the revenue of a specific product (group), by introducing consumers to in-store activities through mobile phones.

Experiment H5: Location-Based Advertising, based on a price promotion, has a better effect compared to Location-Based Services regarding the increase of attendance and sales.

Experiment H6: Location-Based Advertising, based on a premium promotion, has a better effect compared to Location-Based Services regarding the increase of attendance and sales.

Experiment H7: Monetary promotions (price promotions) pose as a more effective tool as a part of Location-Based Advertising than non-monetary promotions (premium promotions).

2.10 Research Model – Study 2

Based on the literature the following research model was constructed for the second study (figure 1). It was expected that Location-Based Services and the addition Location-Based Advertising (tested in different forms) affected the attendance and (product) sales.

At first a baseline measurement was taken; this baseline measurement consisted of past years (2016) results on sales and attendance (for more information on these measurement instruments please see chapter 4 of study 2). This baseline measurement was taken for each individual stimulus condition and was used to determine the success of the stimulus situation compared to a situation without this situation in an equal time period.

The LBS stimulus situation basically measures the effects of adding a mobile marketing aspect that strictly provides information and no other form of promotions. The LBA stimulus situation adds a marketing promotion activity to this. This means, on top of providing information (LBS) the participants are also triggered with a form of promotion (LBA in the form of premium, price promotion or a combination of these two). To measure if adding a promotion activity has an effect on the measuring instruments over strictly providing information.

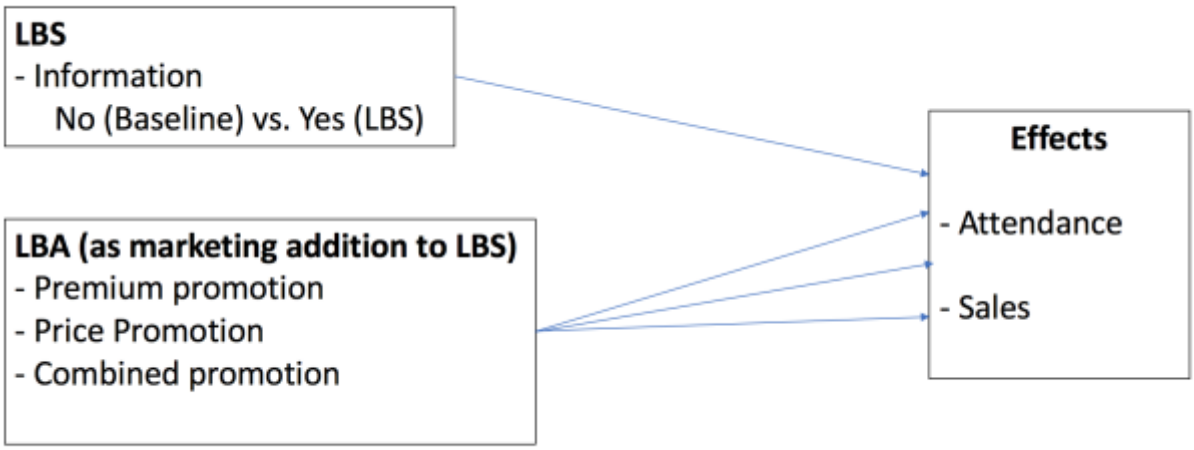

Figure 1. Research Model Figure – Study 2.

2.11 Pre-test

To test whether the right aspects of assessing consumer opinion towards Location-Based Services and Advertising were chosen, a pre-test was set up. In this pre-study 12 consumers were provided with a small survey question sheet. The topics of this test were: sharing their personal information (privacy concerns) with online applications, benefits of promotions and coupon proneness. This group of 12 individual participants was asked how they felt in regard to these topics by rating them on a 5-point Likert scale. An example of the pre-test can be found in appendix A.

Sharing of personal information
The types of personal information that were distinguished were based on a study by Phelps, Nowak and Ferrell (2000), which distinguished five types of information: demographics, lifestyle, purchase-related, personal identifiers and financial information. This has been tested during the pre-test using most of their model variables and some added variables regarding LBS and LBA. The final assessment distinguishes three groups with either low, medium or high willingness to share.

Perceived benefit
In order to receive a clear view of what promotion method delivers a higher perceived sense of benefits to consumers, a number of different rewards were presented to the participants of the pre-test. The participants were asked to rate these promotion factors based on five items from a study on promotion effectiveness. (Chandon et al., 2000): monetary or savings benefit, quality of this promotion, convenience of this promotion, enjoyment of promotion, attractiveness to react to this promotion.

The different promotions that were offered are: a 'low' price promotion which offers 5% discount on all products, a 'medium' price promotion which offers 10% discount on a product group, a 'high' price promotion which offers 25% discount on a specific product, a premium promotion consisting of a free cup of coffee or tea at the restaurant, a combination of the low-price promotion and the premium promotion.

Coupon proneness
To get a general idea of the degree in which people are prone to accepting online coupons a number of different scenarios of coupon deals were displayed to the participants They rated the scenarios on a 5 point Likert scale from very unattractive (1) to very attractive (5). This was done to assess where LBS stands in congruency to other marketing. The scenarios are: a coupon handed to a marketer on the street, a, coupon handed by the entrance of a store, an online coupon found on a website of a company, a coupon found in a magazine or newspaper, a coupon prompted to your mobile screen when you enter a stores' area.

3 Study 1

To examine the current opinion/position of consumers regarding Location-Based Services and Advertising and to test this theoretical background, a survey was conducted among consumers. The survey aimed at discovering whether consumers are ready for this new marketing method and what future use of this technology consumers would like to see and find useful. Furthermore, it could be used to provide potential reasoning for the success or failure of the experiment (conditions) performed in the first study of this paper.

3.1 Research Design and Material

The survey consisted of 35 questions regarding topics related to Mobile Marketing and Location-Based Services. These topics were created to accurately test the hypotheses stated in the theoretical framework and were measured on a 5-point Likert scale to see how people rate certain topics. The topics were picked based on their relation to the research topic, their theoretical background and the tested/proved usability and reliability.

An (online) survey was chosen because it can be spread fairly quick and easy and through multiple channels (e-mail and social media). Surveys have illustrated to be an efficient method to collect valuable data in a short amount of time at low costs. Another advantage was the transference statistic analyzing programs like SPSS. A possible downside to an online questionnaire was the lack of controllability over who filled in the survey, however this can be filtered later thanks to the demographic questions (Granello & Wheaton, 2004; Lefever, Dal, & Matthiasdottir, 2007).

3.2 Procedure and Participants

The survey was conducted over a period of one full week (Monday to Sunday). Respondents were gathered trough in-store application through a tablet and computers and also via social media channels of the organization (Facebook in particular), to further expand the number of participants the mailing list of the organizations' newsletter was also used to send out the request to fill in the survey. The survey was Dutch because the vast of customers of the organization come from the Netherlands and the researcher aimed at avoiding any translation bias. The survey started by explaining the reasoning for this research and presented some basic information like duration, organization and an opt-out possibility.

The first question was an informed consent stating that the participant was voluntarily taking part in this research. Followed up by demographic question: gender, age and highest completed educational level. After this introductory part, the real survey began and at the end the participant was thanked for his/her time and was then asked to (optionally) fill in an e-mail address to be kept up to date with this research. Lastly there was also be a segment to fill in optional remarks regarding the survey and this concluded this research. The results were analyzed by the researcher and stated in the results department of this thesis.

Survey information
In total 307 participants fully completed the online survey (in Dutch) and were useful for analysis. Of these participants, the majority was female, 244 women completed the survey (79.5%) and 61 men (19.9%). The age of respondents varied from 18 until 72 years old with a mean of 40 years. This overall resembles the consumers in the store for which the survey was conducted. For more detailed participant characteristics please consult table 3.

Table 3. Participant's Demographics

		n	%
Age			
	18-30	69	22.5%
	31-40	81	26.4%
	41-50	103	33.6%
	50+	49	16.0%
Education			
	Low education	37	12.1%
	Medium education	152	49.5%
	High education	113	36.8%
Gender			
	Male	61	19.9%
	Female	244	79.5%

3.3 Measurement

To test what consumers, think of LBS and how they perceive this marketing method a survey was conducted to further examine their opinion. The dependent variables to test this have been derived from earlier studies, consisting of items that are reliable and valid measures confirmed by factor analyses and Cronbach's alpha (H. H. Bauer et al., 2005). Please also view the earlier mentioned hypotheses section of the survey to find reasoning behind these topics and what they have eventually meant in the results section.

Dependent measures	**Consulted literature**
Intentions to use mobile marketing(INT)	(H. H. Bauer et al., 2005; Taylor & Todd, 1995)
Attitude Towards Mobile Marketing (ATT)	(H. H. Bauer et al., 2005; Taylor & Todd, 1995)
Information Influence (INF)	(Altuna & Konuk, 2009; Tsang et al., 2004)
Irritation/Intrusiveness (ITR)	(Altuna & Konuk, 2009; Tsang et al., 2004)
Personalization Benefits(PER)	(Chellappa & Sin, 2005; Mittal & Lassar, 1996)
Locatability Benefits (LOC)	(Xu et al., 2009)
Risk Beliefs (RSK)	(Jarvenpaa et al., 1999; Malhotra, Kim, & Agarwal, 2004a)

Moderating variables	**Consulted literature**
Privacy Concerns (PRC)	(Chellappa & Sin, 2005; Sheng et al., 2008)
Coupon Proneness (CPP)	(Dickinger & Kleijnen, 2008; Kleijnen, De Ruyter, & Wetzels, 2007; Swaminathan & Bawa, 2005)

Intention to use Mobile Marketing **-** The survey consisted of 3 questions to measure to what extent participants have the intention to use Location-Based services (α = .84). These questions are 'I will use mobile advertising whenever I have the chance', 'I intend to use mobile advertising for shopping if I receive it' and 'I expect to use mobile advertising to purchase after receiving it'.

Attitude Towards Mobile Marketing - The dimension of *consumer attitudes towards mobile marketing* was measured using three subscales. Participants were asked to fill in their opinion regarding the implementation of mobile advertising.

The participants were asked to rate their opinion on a scale leading from totally disagree to totally agree. The main consensus of the questions was "I like the idea of mobile marketing (1), it is a good idea (2), it is a wise idea (3)" α = .89). A second scale to measure attitude towards mobile marketing was *irritation and intrusiveness* this subscale was also measured by a five point Likert scale ranging from totally disagree to totally agree (α = .86). This scale consisted of 2 subscales that contained the questions "mobile advertising is irritating to me (1) and content in mobile advertising are often annoying (2)".

Information Influence - The variable *Information Influence* aimed at exploring the degree in which consumers' find that LBS and mobile marketing can provide them with the useful information at the right time. Therefore, this variable was tested by using 2 items: 'I feel that Location-based services are a useful source of timely information' and 'location-based services can provide the information I need'.

Irritation/Intrusiveness – A construct of *irritation and intrusiveness* was added to review possible threats of Location-Based Services (α = .86). This construct was measured using 2 subscales, these subscales consisted of the following statements: 'I feel that mobile advertising is irritating.' and 'Contents in mobile advertising are often annoying.'.

Benefits - The final construct in the dependent measures sector, the benefits, consisted of 2 scales: *personalization benefits* and *locatability benefits* both consisting of 3 subscales each to come to an understanding of participants view of these concepts. These scales were measured using a five point Likert scale ranging from totally disagree to totally agree.

The personalization scale (α = .71) consisted of items on the topics of "mobile advertising displays a personalized message (1), it is personalized for my usage (2), content is personalized (3)". The locatability benefits scale (α = .89) included the items "I am able to receive up-to-date information whenever I need (1), able to access relevant information at the right place (2) and able to access relevant information whenever I want (3)".

Risk Beliefs - The construct of *risk beliefs* in participants was measures using a five point Likert scale ranging from totally disagree to totally agree. The scale consisted of five items (α = .87) being for example "sharing personal information is risky and providing firms with personal information could cause unexpected problems".

Privacy Concerns - The construct of *privacy concerns* (α = .85) was measured using 4 subscales, measuring if participants were sensitive regarding their personal information and if they showed concerns regarding how their information could be used by organizations on different levels.

Coupon Proneness - The scale of coupon proneness was measured to accurately predict how consumers feel regarding coupons and advertisements in general to observe whether this marketing method was effective and consumers are positive towards this on its own before combining this aspect with mobile marketing and introducing it to consumers in the form of Location-Based Services and Advertising. To accurately measure this construct it consisted of 7 subscales asking if participants found coupons useful, good, enjoyable and convincing.

3.4 Results of Study

This chapter displays the results of the second study, namely the survey/ online questionnaire. The survey resulted in 307 completed and usable responses. Each tested variable has its own paragraph in this chapter. Furthermore, a multiple regression analysis was performed, for the survey research model with the corresponding hypotheses. Lastly, this chapter contains an overview of all hypotheses and their result. An example of the survey as well as an overview of the survey instruments and their reliability ratings can be found in the appendences. The means and standard deviation divided by gender and age grouping has been displayed in table 4.

	Male	Female	0-30 years old	31-40 years old	41-50 years old	50+ years old	Total
Measures	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)
Intention to use Mobile Marketing	3.67 (.65)	3.49 (.79)	3.82 (.78)	3.46 (.81)	3.51 (.68)	3.00 (.78)	3.53 (.76)
Attitude Towards Mobile Marketing	3.28 (.51)	3.28 (.46)	3.42 (.48)	3.28 (.49)	3.24 (.45)	3.23 (.40)	3.29 (.47)
Informativeness	3.97 (.92)	3.81 (.80)	4.02 (.71)	3.78 (.97)	3.91 (.75)	3.58 (.86)	3.85 (.83)
Irritation/Intrusiveness	3.71 (.75)	3.64 (.90)	3.67 (.79)	3.69 (.87)	3.59 (.96)	3.75 (.85)	3.66 (.88)
Personalization Benefits	2.74 (.77)	2.73 (.78)	2.71 (.78)	2.75 (.79)	2.71 (.81)	2.82 (.66)	2.74 (.77)
Locatability Benefits	3.47 (.85)	3.31 (.86)	3.32 (.78)	3.35 (1.01)	3.42 (.74)	3.24 (.92)	3.35 (.85)
Risk Beliefs	3.43 (.78)	3.56 (.70)	3.44 (.76)	3.51 (.70)	3.58 (.71)	3.63 (.66)	3.54 (.71)
Privacy Concerns	3.57 (.87)	3.68 (.71)	3.56 (.78)	3.58 (82)	3.73 (.68)	3.79 (.67)	3.66 (.74)
Coupon Proneness	3.23 (.69)	3.36 (.65)	3.59 (.58)	3.32 (.58)	3.32 (.58)	3.06 (.57)	3.34 (.65)

Table 4. Means and Standard Deviations per Measure and Demographics

Intention to use Mobile Marketing

In general, the participants' intention to use Location-based Services was on the positive side (Mean = 3.5, *SD* = .76). There was no evidence so support that men have a higher intention to use mobile advertising then women (T-test significance .37). No significant difference was observed; this is in contrast with survey hypotheses 6 that was therefore rejected.

There was evidence to support that a higher consumer age indicates lower intention to use mobile advertising. However, this evidence has to be reviewed. he means for 50+ years old is .409 lower (on a 1-5 scale) than 0-30 years, for the age group 41-50 years old this was .321 lower compared to 0-30 years old and for the age group 31-40 years old this difference was -.340. which all are significant differences at the 0.1 level.

However, no significant difference was found between the 50+ years old and the other 2 groups (31-40 years old and 41-50 years old. Therefore, survey hypothesis 8 was partly supported because the lowest age group (0-30 years old) seems more open to using LBS than the older age groups. As for hypothesis 3, which states that the perceived irritation and

intrusiveness of LBS contribute negatively to the intention to use it, this was supported ($F_{1,304}$ = 84.238, p = <.001). A significant difference was found of irritation predicting a negative intention to use LBS (B = -.532, β = -.466) We can therefore accept this hypothesis.

Attitude Towards Mobile Marketing

This study found that the consumer coupon proneness positively influences consumer attitude towards mobile marketing. Even though the score was low (R^2 = .04, $F_{1,302}$ = 11.85, p = <.001) there was a significant difference (β = .20, p = <0.001). No significant effect was found on this measurement regarding gender or age group differences.

Information influence

The Information Influence was found to be on the high side (Mean = 3.85, SD = 0.83), and thus consumers found overall that LBS and mobile marketing are an informative tool and can provide them with relevant and useful information. For this variable, an effect was observed regarding gender and age group differences but this was not significant and thus was not noted.

Irritation/Intrusiveness

A significant effect was observed for the relation between privacy concerns and risk beliefs (R^2 = .14, $F_{1,305}$ = 50.13, p = <.001) With higher privacy concerns experience higher levels of risk beliefs. This is logical because consumers who tend to have more concerns also perceive more risks.

Perceived Usefulness/Benefits

This study found (next to the mentioned hypotheses) that perceived personalization benefits contribute negatively to perceived risks, a significant difference was found. However, the explanatory factor for this was low (R^2 = .04, $F_{1,305}$ = 12.554, p = .00) a significant negative effect was observed in a regression analysis of these variables (β = -.20, p = <0.001).

No significant differences were found for gender. This was in contradiction with hypothesis 4, which states that men have higher perceived benefits towards mobile marketing then women. As for education differences regarding the perceived benefits of LBS, likewise no significant differences were found to support this hypothesis. Hence hypothesis 12 was also rejected.

Risk beliefs

The consumer risk beliefs were in general on the high side (Mean = 3.5, SD = .71), meaning consumers experience using mobile marketing and (voluntarily) providing information to this tool as risky. Sharing personal information could cause unexpected problems was the overall consensus that can be derived from this.

No significant differences were found between gender and risk levels. Women had a higher mean (Mean = 3.56) then men (Mean = 3.44) although this difference was not found to be significant (p = .22), hypothesis 10 was therefore rejected. Consumers with higher privacy concerns experience higher levels of perceived risks, the statement can be confirmed (β = .78, p = <0.001). A significant difference was found with a high explanatory factor (R^2 = .61, $F_{1,305}$ = 484.73, p = <.001).

Privacy Concerns
The overall opinion of privacy concerns was on the high side (Mean = 3.66, *SD* = .88). Consumers care about their privacy and tend to be more cautions when the information they are required to provide becomes more personal. This could form an obstacle for the implementation of LBS for the reason that it requires the GPS location of the consumers' mobile phone and thus knows their current location by approximation.

Coupon Proneness
The overall score illustrates consumers were overall positive towards coupons (Mean = 3.33 *SD* = .65) This illustrates that the idea of coupons was overall like by consumers and was not a deciding factor in declining it if it were combined in a marketing tool through mobile marketing/LBS.

3.5 Additional Analyses

In an attempt to further examine peoples' opinion regarding mobile marketing and LBS a number of additional questions were asked which were not backed up in reliability by any found literature. Nevertheless, they were deemed interesting for this research for the fact that it offers information regarding consumers' wishes and needs regarding LBS and LBA.

Consumers were asked to fill in the desired aspects they had for Location-Based Services and mobile marketing, if they had any, and were in a position where they could select any (or none) of the factors that are most common in today's mobile marketing or demonstrate high potential for future application. Out of these desired aspects 303 out of the total of 307 respondents (99%) filled in at least 1 aspect of mobile marketing they desired.

Table 5. Desired Aspects of LBS by Consumers

Variable	Frequency	Percentage
Mobile payment	70	22.8%
Interactive floor plan	188	61.2%
Basic information (store hours, activities, service etc.)	196	63.8%
Product advertisements & deals	155	50.5%
Chat function	60	19.5%
Different: namely…	22	7.2%

As illustrated in table 5 participants demonstrated a high interest in aspects of mobile marketing. The most desired aspects of this new marketing tool are: an interactive floor plan (61.2%), basic information like opening hours, store activities, etc. (63.8%) and relevant store product advertisements and deals (50.5%).

As illustrated in table 5 an option for participants own contribution was added as well. This resulted in 22 responses. These responses relate to: an online folder (which could be considered as basic information), and (additional) product information.

3.6 Regression Analysis for Intention to use Mobile Marketing

The intention to use LBS was tested with a regression analysis against other variables that it might be influenced by. This analysis consisted of a 2-step hierarchical multiple regression analysis and the results of this analyses has been displayed in this paragraph. Step 1 accounted for 52% of the intention to use mobile marketing (R^2 = .519, $F_{8,296}$ = 41,936, p = <.001). On step 2, where demographical data was added to this regression equation, this number increased by 1.2% (R^2 = .532, $F_{11,286}$ = 31.698, p = <.001).

In total 6 out of the 11 (in step 2) variables that reveal significant influence on the intention to use LBS. These variables are: Information Influence, attitude towards mobile marketing, irritation/intrusiveness, locatability benefits and age. The largest significant effect was observed in the variable of locatability benefits (β = .31, p = <0.001). There are 3 variables that almost reveal a significant effect, meaning that if the survey participant group had been larger these variables might have revealed a significant effect. These variables are risk beliefs, gender and personalization benefits. No significant (enough) difference on personalization benefits was found. For all data see table 6 and for results regarding the hypotheses please view table 7.

Table 6. Regression Analysis for Intention to use Mobile Marketing

Table information:

B = Unstandardized Regression Coefficients
P = Significance
β = Standardized Regression Coefficients
n = 307

	Variable	***B***	***β***	***p***
Step 1	Information Influence	.13	.14	**.00**
	Attitude Towards Mobile Marketing	.31	.19	**.00**
	Irritation/Intrusiveness	-.14	-.16	**.00**
	Personalization Benefits	.05	.05	.23
	Locatability Benefits	.27	.30	**.00**
	Risks Beliefs	-.12	-.12	.08
	Privacy Concerns	-.04	-.04	.59
	Coupon Proneness	.18	.16	**.00**
Step 2	Information Influence	.11	.12	**.00**
	Attitude Towards Mobile Marketing	.30	.18	**.00**
	Irritation/Intrusiveness	-.18	-.20	**.00**
	Personalization Benefits	.07	.07	.15
	Locatability Benefits	.28	.31	**.00**
	Risk Beliefs	-.10	-.10	.14
	Privacy Concerns	-.02	-.02	.80
	Coupon Proneness	.16	.14	**.00**
	Gender	-.15	-.08	.06
	Age	-.01	-.10	**.03**
	Education	.01	.01	.79

3.7 Hypotheses Result Overview

Table 7. Survey Hypotheses Overview (= Partly supported/rejected, please consult corresponding literature)*

H#	Hypotheses	Result
H1	The higher the attitude towards mobile marketing, the higher intention to use mobile marketing.	Supported
H2	The Information Influence consumers perceive contributes positively towards the intention to use mobile marketing.	Supported
H3	The perceived irritation/intrusiveness contributes negatively towards the intention to use mobile marketing.	Supported
H4	The perceived benefits contribute positively to the intention to use mobile marketing.	Supported*
H5	The risks beliefs contribute negatively towards the intention to use mobile marketing.	Rejected
H6	The privacy concerns contribute negatively towards the intention to use mobile marketing.	Rejected
H7	The coupon proneness level of consumers negatively contributes towards the intention to use mobile marketing	Supported
H8	The higher a consumers' age the lower the intention to use mobile marketing	Supported
H9	Men have higher perceived benefits towards mobile marketing then women	Rejected
H10	Women have higher risk beliefs considering mobile marketing then men	Rejected
H11	Men have a higher intention to use mobile marketing then women	Rejected
H12	The higher a consumers' education the higher the perceived benefits	Rejected

4 Study 2

This study aims at examining the effect of LBS through mobile marketing in practice. Therefore, this study consisted of a field experiment performed in a retail stored based in the Netherlands. To examine different aspects of the LBS technology, a distinction was made between Location-Based Services and Location-Based Advertising, the lather being split up into 2 different methods.

4.1 Testing Location-Based Services and Advertising

A 2x2 experimental design has been created in order to test the experiment hypotheses. Hence 4 different scenarios are formed. All of these experimental situations have been tested against a baseline (sales figures of 2016) in order to determine the success:
A - Location-Based Services strictly delivered to consumers to provide information.
B - Location-Based Advertising using a premium promotion consisting of a free gift (e.g. two free cups of coffee in the in-store restaurant).
C - Location-Based Advertising using a price promotion consisting of 25% discount on a specific product group.
D – Location-Based Advertising applying a combination of the premium and price promotion mentioned in situations B and C.

This experiment tested the effects of LBS and LBA stimulus material against a baseline measurement for each of four the stimulus situations. This baseline measurement was taken by examining sales figures of the past year (2016) in the same time period as the stimulus situation was tested in this year (2017). If differences in overall turnover are present between the stimulus situation period and the baseline measurement period these differences were equalized. For instance, if the overall turnover was €100.000, - in 2016 (no stimulus material) and €90.000, - in 2017 (stimulus situation A, B, C or D) the turnover and all other variables were multiplied to match last year's results. This was done so no differences can occur due to other factors. An overview of how this method works can be found 4.5 Procedure.

Premium promotion

Price promotion	No	Yes
No	A - Information	C – Premium Promotion
Yes	B – Price promotion	D – Combination promotion

vs.

Control Measurement A	Control Measurement C
Control Measurement B	Control Measurement D

Figure 3. Experimental Design

Location-Based Services effect
In the first part of this experiment the baseline turnover and attendance were measured to assess the normal situation of the store. After that the effect of using Location-Based Services to increase the measurement variables were examined by demonstrating the stimulus material on the mobile phone of in-store consumers.

Location-Based Advertising effect
To further examine if adding an advertising component to the LBS has an increased influence on the measurement variables (turnover and attendance), a variety of different forms of LBA have been offered to the in-store consumers. These stimulus materials consisted of a premium, price and combined promotion like mentioned before. This was done in order to asses if any of these forms increase the measurement variables compared to LBS for the fact that LBA was more expensive and therefore should be a worthy addition to this marketing method.

4.2 Conditions

Based on consulted literature a number of 4 different delivery methods have been selected to test in a real-life environment. This paragraph states what each of these 4 four conditions contains and how this has been presented to the consumers participating in this experiment.

Condition A – Informational
In this first stimulus situation, which consisted of a service based stimulus situation, the participants were provided with information regarding an in-store event taking place through mobile marketing. An example of the stimulus material for this condition used in the experiment has been displayed in paragraph 3.4 figure 4.

Condition B – Informational + price promotion
In condition B, the participants were provided with the information regarding an in-store event taking place through mobile marketing. In addition to the information a promotional teaser was displayed in which a discount was offered to the participants on a promoted product. For the corresponding stimulus material please consult paragraph 3.4 figure 5.

Condition C – Informational + premium promotion
In this stimulus situation, the participants were provided with information regarding an in-store event taking place through mobile marketing. In addition to this information a promotional teaser was displayed in which the consumer was offered two free cups of coffee if they chose to visit a product group area. Example shown in paragraph 3.4 figure 6.

Condition D – Informational + price and premium promotion
In this final stimulus situation, the participants were provided with the information regarding an in-store event taking place through mobile marketing. In addition to this information a promotional teaser was displayed in which the consumer was offered a discount on a promoted product as well as two free cups of coffee if they chose to visit the product group area of the promoted product. The corresponding text and visual of this stimulus condition has been displayed in paragraph 3.4 figure 7.

4.3 Success Rate Measurements

Products group revenue
The product revenue of the promoted product in the stimulus situation has been assessed after the running period of every condition. The turnover of the products group has determined which condition was most effective in increasing sales. To make sure this was reliable the running periods were equal in time and were measured with past years' product group revenue.

Customer attendance
This factor of success has also been tested during the running period of every condition. The number of consumers visiting the product group area has been assessed and based on this number the effective of every condition was analyzed on attracting people to the product area. This was assessed by physically being present at the location and counting attendance.

4.4 Stimulus material

This paragraph displays the actual visuals of the stimulus materials that were displayed to the consumers participating in the experiment.

Figure 4. Stimulus A – Informational

Figure 5. Stimulus B – Price

Figure 6. Stimulus C – Premium

Figure 7. Stimulus D – Premium + Price

4.5 Procedure

Dutch and German speaking mobile phone users who at the time were present in the store were confronted with one of the stimulus condition which at that time was active. This stimulus material consisted of a pop-up screen display giving them information (and an advertisement) on a special event at an area in the store. The participants were unware of the experiment and do not know that they were being monitored to make sure this experiment resembles a 'real-life' field experiment and no bias was created. The effect the visual stimulus, that was displayed to the consumers using their mobile phone inside the store, had on these consumers was measured by the researcher being present at the location that was advertised and screening the attendance of consumers. Secondly, the turnover of this specific product group was assessed to see if there was a sale increase an all of the conditions have been compared to a baseline consisting results that have been achieved over past years on these measures. This means that the turnover and amount of receipts in 2016 was consulted and the corresponding sales figures of the product used in the stimulus conditions was consulted over the time period of the experiment in the past year, the turnover and receipts were then compared to the figures of 2017 and multiplied (or divided) to match the sales figures. The same was done for the sales figures of the products, resulting in the increase in sales.

Example of this method:

Turnover in 2016: €50.000	Receipts in 2016: 2000	Product sales 2016: 10
Turnover in 2017: €60.000	Receipts in 2016: 2400	Product sales 2017: 20
Difference +20%	+ 20%	

Product sales 2016 = 12 (10 actual sales x 1.2 for 20% normal increase over the past year)
Product sales 2017 = 20
Sales increase = + 66.6% (increase due to stimulus situation)

To ensure the correct methods were used to introduce this experiment to the participants the stimulus materials were developed in collaboration with a team of marketing and graphics professionals. To further ensure technical application a collaboration with the internet application company Ixpression was created. This company specializes in Wi-Fi applications and landing pages for networks. Ixpression was provided with the time framing of the stimulus and the stimulus materials that accompanied these time frames.

4.6 Participants

In order to examine what type of consumers participated in this experiment, the demographics of the customers that were present in the store during the experiment, a number of different variables have been consulted to clarify this.

The variables that have been consulted include (among others): Google Trends search demographics, Company Facebook follower demographics, Company Loyalty Card demographics, consumer observation in the time frame of the experiment and payment information.

This analysis of variables lead to the following results in regard to the participants. The majority of customers in the store at the time frame of the experiment were Dutch (67%) and German (27%) consumers. These consumers mainly come from the region of the store which is the province of Gelderland and the province that lies above it called Overijssel, as far as Dutch consumers were considered. In German consumers, the most prominent number of consumers come from the regions close to the Dutch border: North Rhine-Westphalia and Lower Saxony. The experiment was conducted in a time frame of 8 days in which each of the 4 stimulus conditions was conducted for a number of 2 days. During the total time span of this experiment a number of 24,813 consumers visited the company store. In order to ensure reliability of this experiment and eliminating external causes for divergent results the time frames of the experiment were picked precisely to ensure no external factor could be the cause of any abnormality in the results. Furthermore, the sales numbers of the related article were standardized to a certain turnover, meaning if in the time frame of stimulus A, a turnover of € 50,000 and in the time frame of Stimulus B this was only € 25,000 the sales numbers of stimulus B were doubled to equalize each sales period to their sales numbers.

4.7 Results of Study

The experiment was run by examining last year's result and comparing it to this year's result and a general baseline of similar turnover and customer attendance to ensure the reliability of the results. As stated in the methodology section of this research this experiment consisted of 4 conditions with differentiating stimulus material to test if LBS and LBA work and if there was a positive difference for LBA compared to LBS.

4.8 Stimulus Material Results

The individual analysis of each of the four stimulus situations of the experiment have been displayed here. Each situation has been provided a short introduction with basic information followed by the increase in sales (in percentages) concerning this stimulus time frame and a rating of the attendance increase. The attendance was rated by ranging the increase on a 5-point scale ranging from low to extreme increase in attendance based on the consumer interest in the product area and in the case of the premium promotion also the claiming of coupons. There were five levels for measuring attendance increase: None (+ 0 - 15%) – Low (+ 15 - 30%) – Medium (+ 30 - 45%)– High (+ 45 - 60%) – Extreme (+ >60%).

Stimulus situation A - informational
The first situation of the experiment was held on the 25th and 27th of February 2017. This stimulus material included a case of LBS and strictly provided information regarding a product and its current location. Overall LBS was deemed successful. A sales increase of the featured product occurred of 23.61% compared to the baseline. The attendance acquired a similar increase and was rated as 'medium'. Overall LBS can be rated as an effective tool to increase customer attendance and product turnover, hence hypotheses 1 and 2 were supported.

Sales result:	23.61%
Attendance rating:	Medium

Stimulus situation B – Price promotion
The second stimulus context included a price promotion consisting of a 25% discount on the related product. This second experiment situation was held on the 28th of February and the 1st of March in the year 2017. The stimulus material provided information regarding the location of the product and the claiming method for the discount on this product. This caused a large sales increase of 48.34% compared to the baseline and a 24.73% increase on top of the LBS stimulus situation of stimulus A. The acquired attendance had a large increase and was therefore rated 'High' likewise to the sales the attendance was higher than that of the stimulus situation A. Hence, H3 and H4 were partly supported and H5 was supported.

Sales result: 48.34%
Attendance rating: High

Stimulus situation C – Premium promotion
The stimulus situation C included a premium promotion and was the third in line of tested experimental situations. This premium promotion consisted of a coupon that could be claimed at the product area location which granted the participants 2 free cups of coffee in the store's restaurant. This stimulus situation took place on the 2nd and 3rd of March 2017. The stimulus material provided information regarding the product as well as instructions to claim the coupon. A large increase in sales due to the stimulus material has been observed. However, the sales increase of this stimulus did not exceed that of the LBS stimulus of stimulus A and had a slightly lower sales result of -2.36%. The attendance during the time frame of this stimulus increased although this was also not a large increase over that of stimulus A and was determined as 'Medium'. Due to the fact of the price promotion performing better than the premium promotion hypothesis 7 has been supported. As for hypotheses 3 and 4, these cannot be completely supported. Hypothesis 6 has been rejected.

Sales result: 21.25%
Attendance rating: Medium

Stimulus situation D – Combination of price and premium promotion
The fourth and final experiment context consisted of a combination of the previous stimulus situations B and C and offered a price promotion as well as a premium promotion in order to see if this had any effect compared to the stand-alone contexts. This final stimulus situation was performed on the 4th and 5th of March 2017. Overall this stimulus situation was successful, it created and increase in sales compared to the baseline of 53.98%. Meaning an increase of over 30% compared to the LBS stimulus of situation A and the LBA stimulus of the premium promotion in situation C. However, it did not exceed the sales result of situation B, the price promotion stand-alone, by a large amount only increasing this by a small 5.64%. As for the attendance, there was an increase compared to the baseline measurement as well as the LBS stimulus result. The results in attendance of stimulus B and D was quite similar and stimulus D has also received an equal rating of 'High'.

Sales result: 53.98%
Attendance rating: High

Stimulus result on product revenue

In the result section of this study under 'sales result' of each stimulus situation the overall revenue increase of the featured product in the stimulus situations was displayed. In this paragraph (table 1) is displayed how this final percentage has been calculated and what the sales increase was, measured in 2017, compared to the sales figures of 2016. This comparison was done on turnover as well as the number of receipts. Furthermore, the results have been standardized to ensure no difference in daily turnover or receipts could cause for this effect (meaning when in 2016 a number of 10 products was sold and a turnover of €100.000, - was achieved and in 2017 a number of 10 products was sold as well but with a turnover of only €50.000, - was achieved, the number of products was doubled to meet the standard turnover of €100.000, -).

Standardized contrast percentages compared to turnover 2016

Stimulus A - Info	Percentages
25-Feb-2017	9.06%
27-Feb-2017	26.72%
Stimulus B - Price	
28-Feb-2017	24.32%
1-Mar-2017	52.50%
Stimulus C - Premium	
2-Mar-2017	22.50%
3-Mar-2017	8.18%
Stimulus D - Combination	
4-Mar-2017	42.20%
5-Mar-2017	53.90%

Standardized contrast percentages Compared to receipts 2016

Stimulus A - Info	Percentages
25-Feb-2017	13.63%
27-Feb-2017	45.03%
Stimulus B - Price	
28-Feb-2017	50.66%
1-Mar-2017	65.86%
Stimulus C - Premium	
2-Mar-2017	29.60%
3-Mar-2017	24.73%
Stimulus D - Combination	
4-Mar-2017	49.06%
5-Mar-2017	70.75%

Total standardized contrast percentages Based on turnover & receipts mean

Stimulus A - Info	Mean Percentage	Combined mean %
25-Feb-2017	11.35%	23.61%
27-Feb-2017	35.88%	
Stimulus B - Price		**Combined mean %**
28-Feb-2017	37.49%	48.34%
1-Mar-2017	59.18%	
Stimulus C - Premium		**Combined mean %**
2-Mar-2017	26.05%	21.25%
3-Mar-2017	16.46%	
Stimulus D - Combination		**Combined mean %**
4-Mar-2017	45.63%	53.98%
5-Mar-2017	62.32%	

Table 1. Experiment Product Revenue Result in Percentages (Compared to Baseline Measurements)

4.9 Hypotheses Result Overview

As stated in the literature of this chapter LBS and LBA performed well on increasing sales and customer attendance in a store. Hence, most hypotheses have been supported. A number of hypotheses that have been rejected due to the lack of result or evidence to back them up. For a complete overview of all the hypotheses of the experiment and their result based on the results of the experiment and literature please see table 2.

Table 2. Experiment Hypotheses Overview

H#	Hypotheses	Result
H1	With the help of Location-Based Services, a retail store can increase the number of consumers visiting an area of a store, by introducing consumers to store activities through mobile phones.	Supported
H2	With the help of Location-Based Services, a retail store can increase the revenue of a specific product (group), by introducing consumers to in-store activities through mobile phones.	Supported
H3	With the help of Location-Based Advertising, a retail store can increase the number of consumers visiting an area of a store, by introducing consumers to store activities through mobile phones.	Supported
H4	With the help of Location-Based Advertising, a retail store can increase the revenue of a specific product (group), by introducing consumers to in-store activities through mobile phones.	Supported
H5	Location-Based Advertising, based on a price promotion has a better effect compared to Location-Based Services regarding increasing attendance and sales.	Supported
H6	Location-Based Advertisements, based on a premium promotion has a better effect compared to Location-Based Services regarding increasing attendance and sales.	Rejected
H7	Monetary promotions (price promotions) pose as a more effective tool as a part of Location-Based Advertising than non-monetary promotions (premium promotions).	Supported

5 Conclusion and Discussion

This chapter provides a discussion of the results of this research. The before mentioned hypothesis and analysis of these hypotheses in the results section are discussed. Furthermore, a paragraph discussing the practical implications of this research in the field of marketing has been submitted and to finish this paper a final conclusion has been presented.

5.1 Conclusion

The main objective of this research was to find out more regarding the effects of mobile marketing with the focus on Location-Based Services (LBS) and Advertising (LBA). This study attempted to achieve this by 2 research methods. A practical implication in the form of an experiment to find out how consumers react to this quite new phenomenon in a real-life situation and a theoretical research consisting of a survey to further examine LBS and LBA with theoretical background that could possible provide an explanation and further insight for the success or failure of the experiment.

The main research question for the survey part of this thesis was: Do consumers feel mobile marketing (including LBS and LBA) was a positive addition to their shopping experience or do they see it as a risky and privacy invading marketing tool? The main purpose of the experiment was to test whether LBS and LBA can have a positive effect on sales and attendance for an organization over the traditional forms (or lack thereof) of marketing undertaken by organizations. Furthermore, the different methods in LBS and LBA were tested to see if one method was more effective than the other. Therefore, the main research question of the experiment part of this thesis was: Are LBS and LBA effective (in-store) marketing tools for organizations as opposed to a baseline measurement which does not include a form of LBS and which form of LBS works ideally in a real-life setting?

Survey

The survey component of this study acted as a separate study that researches the consumer opinion of mobile marketing a Location-Based Services. It could possibly be used to clarify the success or failure of the experiment, though it was intended as a separate research to examine how consumers feel in regard to this new marketing tool.

A number of 307 participant surveys were useful for analysis. The conclusions and discussion of the results have been displayed here. Overall the intention to use Location-Based Services was on the positive side in consumers. They seemed overall positive to this development of marketing methods. This study demonstrated that, especially in the age groups of 50 years and younger, LBS was a welcome addition to an organization. The information that can be derived from this tool was deemed as beneficial and participants agree on the benefits this marketing tool can offer, agreeing with the found studies in the theoretical framework boasting the positive effects of LBS compared to traditional marketing (Luo et al., 2013).

Though consumers see that personalization can offer great benefits of personalized content to them they also see the risks and privacy concerns that come with this and it is important for organizations wanting to implicate this tool to keep this in mind. An organization engaging in LBS or LBA should guarantee a consumer's privacy and try to

eliminate the risks consumers see in using this tool. They fear sharing personal information could cause unexpected problems and this should be well explained when implementing this. As a secondary part of the perceived benefits, the locatability benefits, it is important to let consumers be the initiator of locating them. For instance, let the consumer download or open an app or website thereby initiating the contact with the company, this leads to a consent of the consumer to the company and presents permission to further be of service by adding, for example, a locating tool to be of better service.

This study survey demonstrated that consumers feel LBS and LBA can be an effective and helpful tool for them when their privacy is safe and the risks (of sharing information, etc.) were minimized. When well thought out by an organization it can be a successful, useful and beneficial marketing tool that offers new ways of personalizing marketing messages and thereby offering a level of service to consumers that has not been matched by any other marketing tool and is the closest marketing method aside from real personal (employee) contact with a company. A possible explanation through theory of this is the high possibility of reminding, informing the customer and enhancing (shopping) enjoyment which were mentioned as important factors to the success of a marketing tool mentions by Mehta, et al. (2008).

In one of the last sections of the survey the consumer was asked to fill in any desired aspects they had for Location-Based Services (if any). This construct revealed a high engagement of consumers in LBS as well and that consumers have a high desire of its possibilities. An outstanding number of 99% of all participants (303 out of 307) filled in at least one aspect they desired of LBS. The results of this scale have been displayed in chapter 8.8 *additional analyses* and provides a prime idea of what people would like to see. A number of over 50% voluntarily desired to receiving product advertisements & deals on their mobile phone through LBA.

Finally, the intention and attitude towards mobile marketing and LBS have been tested to see which variables have an influence on these factors so organizations know what to look out for when implicating this marketing tool. This study found that intention to use and the Information Influence of the tool have an influence on the attitude towards it. This means that providing the right information is crucial for creating a positive attitude towards LBS. Furthermore, this study illustrated that many variables significantly influencing the intention to use LBS itself. These factors were: Information Influence, attitude, irritation/intrusiveness, locatability benefits, coupon proneness and age. All of these factors have an effect on the intention to use. It is therefore important to let consumers know what they can expect from LBS/LBA on a positive level by providing which information customers can consult, which locatability and personalization benefits LBS/LBA can offer and finally what has been done (and can been done/altered by the consumer itself) to reduce irritation and intrusiveness agreeing with a part of the literature claiming irritation and intrusiveness cause negative effects (Malhotra et al., 2004b). Although it does not offer any backup theory for a construct to measure privacy risks that was created by Jarvenpaa, Tractinsky & Saarinen (1999) that states this also has a negative influence on the intention to use LBS/LBA.

To answer the main question of the survey: Yes, consumers feel mobile marketing including LBS and LBA is a positive addition to their shopping experience, they do however also see the privacy risks and possible irritation/intrusiveness of this tool and it is therefore important to apply this marketing tool with caution and in the correct manner.

Experiment

The setup of this experiment was an experimental design with 4 stimulus situations which were tested and compared to a baseline measurement. Overall all 4 stimulus situations were successful. It can be concluded that LBS as well as LBA were effective marketing tool to increase sales and customer attendance. As for the difference of the LBS to LBA and LBA internally between its different applications this study demonstrated a number of important conclusions. For example, this study illustrated that offering a premium promotion (used in this study) does not increase the success of this marketing tool over strictly providing information/LBS. The measuring tool instruments revealed similar results on sales and attendance and it can therefore be concluded that a premium promotion was not viewed as an additional benefit in a real-life application of LBA.

This study revealed that a price promotions do lead to an increase of the measuring tools. Adding a price promotion to LBS stimulus caused for a doubling of sales results for this specific product and also a large increase in customer attendance. Lastly this study demonstrated that the combination of a price and premium promotion as a form of LBA does not have a substantial effect over the price promotion as a separate marketing tool. The findings of this experiment have been backed up by the theoretical framework of this study. However, it does not completely agree on the factors of monetary (price promotion) and non-monetary (premium promotion) promotions. The theory stated that a non-monetary promotion could cause for better results because of the reduced risks and the direct benefits, of for instance a free gift, as opposed to the indirect benefit of first having to buy a product in order to receive the benefit in the form of a discount. A study by Campbell & Diamond (1990) stated that monetary promotions were viewed as a reduced loss while nonmonetary promotions were viewed as a gain. This research does not support this literature and therefore disagrees with its findings. As been mentioned the literature tends to disagree on this, a paper by Mario Palazon & Elena Delgado-Ballester (2009) agrees with the findings of this experiment and have found that monetary promotions have been more effective.

To conclude and provide a final answer to the head question of this experiment: Yes, LBS can be an effective marketing tool for organizations. The most efficient form to offer this was by strictly informing trough mobile marketing (LBS form) or adding a price promotion component to this (LBA form) in order to further increase the success of this marketing tool. A premium promotion or a combination of price and premium promotions has little to no effect compared to, respectively, the before mentioned tools of LBS and LBA.

5.2 Practical Implications

Many of todays' (non-scientific) articles provide information of online versus offline shopping. They claim that people prefer online shopping to offline shopping because of the perceived benefits like reduced effort) the fast overview and quick service. Through LBS its ease of use, the quick service possibilities and personalized content this tool could bring back the enjoyment of offline shopping by adding a combination of online help to it. The experiment of this research has revealed that LBS and LBA can be a successful marketing tool to increase the success of a product(group). Organizations, with large retail stores, could successfully apply this technology to increase the attention and turnover of a component of their store. The practical implication of the survey in this study was to provide organizations, that wish to take part in LBS or are orientating on doing so, with the information they need to ensure this can become a helpful new addition to their marketing formula. What to include in their LBS/LBA tool and what to watch threats to watch out for.

5.3 Limitations and Future Research Directions

A limitation to this research and the future direction this research should go is examining if the application of LBS/LBA would work in any store. There is a possibility that this experiment was only successful because of the consumer group that attended this specific store or that the size of the store is a determining factor of the success. This could be a future research topic to further examine what makes or breaks the success of LBS. Furthermore, the addition of a premium promotion could be further examined in order to see if this form of LBA is successful when applied in different manners that perhaps were viewed as more beneficial to consumers than the premium promotion offered in this experiment. All results of this study should be read within their limitations. One of these limitations of the survey part of this research was the sample group, if this study was replicated the research should strive for equal distribution of gender, education and age. As for the survey part of this study. This study demonstrated personalization benefits, risks and gender have an effect on intention to use LBS that was close to significant. A larger sample of participants could see if these effects are truly significant when a larger number of participants has been consulted. Furthermore, future research could examine other and more specific aspects of (a form of) LBS/LBA to see if any other factors of this quite new marketing method have any effect on the appreciation of this tool by consumers.

5.4 Overall Conclusion

To conclude both the experiment and the survey research part of this study were successful in answering their individual main research question and the survey was able to provide additional possible reasoning for the success of the experiment conditions. This study illustrated that LBS was an effective tool in theory as well as in practice and there is a high potential for consumers that dare to engage in this new marketing method. Choosing the right method of LBS and LBA is crucial for the success of this tool, as well as examining the consumer wants and needs regarding it. It is important to eliminate threats like privacy concerns and irritation by communicating with the users regarding this topic. When applied right LBS can offer great benefits for consumers as well as organizations and this marketing tool should be considered to improve marketing for organizations with physical stores.

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Appendix A – Pre-test

Thank you for participating in this test. This test consisted of 3 short questions to indicate your behavior regarding marketing. Please know that there are no wrong answers and we only use these results to clarify the marketing needs of consumers, increase consumers' experience with marketing and to perform more accurate future research experiments.

Please fill in how comfortable you are with sharing the information with smartphone applications on the topics stated below.
1 = very uncomfortable, 5 = perfectly comfortable

	1	2	3	4	5
Name	O	O	O	O	O
Date of birth	O	O	O	O	O
Gender	O	O	O	O	O
City of residence	O	O	O	O	O
Education level	O	O	O	O	O
Sexual preference	O	O	O	O	O
Hobbies	O	O	O	O	O
E-mail address	O	O	O	O	O
Phone number	O	O	O	O	O
Bank account info	O	O	O	O	O
Annual income	O	O	O	O	O
Smartphone type	O	O	O	O	O
Telephone contacts	O	O	O	O	O
Photos and videos	O	O	O	O	O
Phone serial number	O	O	O	O	O
Agenda	O	O	O	O	O
Product preferences	O	O	O	O	O
Recent online purchases	O	O	O	O	O
Location data (GPS)	O	O	O	O	O
Location history	O	O	O	O	O
Browser history	O	O	O	O	O
Camera access	O	O	O	O	O
Smartphone access	O	O	O	O	O

1. Imagine a store is offering you a promotion, please rate how you qualify these promotions if they were offered to you if you would go to the specific store. In other words, how tempting would this promotion be if it was offered to you in a shopping street to visit a certain store? 1 = very unlikely to visit 5 = very likely to visit

A price promotion which offers 10% discount on a specific product group

1	2	3	4	5
O	O	O	O	O

A price promotion which offers 25% discount on one specific product

1	2	3	4	5
O	O	O	O	O

A premium promotion consisting of 2 free cups of coffee or tea at the restaurant

1	2	3	4	5
O	O	O	O	O

A Combination of the 5% price promotion on everything and the premium promotion consisting of a cup of coffee.

1	2	3	4	5
O	O	O	O	O

2. Please rate the following coupons on their attractiveness to you in a real-life situation. Rated higher when you are more likely to accept and/or use a coupon when this is presented to you. 1 = very unattractive 5 = very attractive

A coupon handed to a marketer on the street

1	2	3	4	5
O	O	O	O	O

A coupon handed by the entrance of a store

1	2	3	4	5
O	O	O	O	O

An online coupon found on a website of a company

1	2	3	4	5
O	O	O	O	O

A coupon found in a magazine or newspaper

1	2	3	4	5
O	O	O	O	O

A coupon prompted to your mobile screen when you enter a stores' area

1	2	3	4	5
O	O	O	O	O

Appendix B – Mobile Marketing Survey

Beste Deelnemer,

Voor een onderzoek aan de Universiteit Twente wordt hier een onderzoek uitgevoerd naar Mobile Marketing. Voor dit onderzoek zouden wij het zeer op prijs stellen als u deze vragenlijst zou invullen. Wij zijn geïnteresseerd in uw mening over Mobile marketing. Er zijn geen goede of foute antwoorden.

Het invullen van de vragenlijst zal ongeveer 7 minuten tijd in beslag nemen en de antwoorden zullen anoniem worden verwerkt. U heeft altijd de mogelijkheid te stoppen met de vragenlijst wanneer u om persoonlijke redenen uw deelname niet langer wilt voortzetten.

Wij hopen natuurlijk dat u de vragenlijst volledig invult. Als u vragen of opmerkingen heeft kunt u deze aan het einde van de vragenlijst doorgeven. Wilt u op de hoogte worden gehouden van de onderzoeksresultaten? Vul dan uw e-mailadres aan het einde van de vragenlijst in.

Alvast hartelijk bedankt voor uw deelname aan dit onderzoek.

Universiteit Twente, Communication Studies,

Tim Obelink

Ik stem geheel vrijwillig in met deelname aan dit onderzoek. Ik behoud me daarbij het recht voor om op elk moment, zonder opgaaf van redenen, deelname aan dit onderzoek te kunnen beëindigen.

○ Ik ga akkoord en ga verder naar de vragenlijst.

Wat is uw geslacht?

Wat is uw leeftijd?

Wat is uw hoogst genoten opleiding?

- Geen
- Basisschool
- VMBO (MAVO)
- HAVO
- VWO
- MBO
- HBO
- WO – universitair/master
- Anders, namelijk…

Deel 1 - Information Influence (INF)

1. Ik vind dat service en aanbiedingen op mijn mobiele telefoon een goede bron van actuele informatie kan zijn het winkelen

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

2. Ik denk dat service en aanbiedingen op mijn mobiele telefoon de informatie kan geven die ik wil weten tijdens het winkelen

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 2 - Attitude towards mobile advertising (ATT)

3. Ik vind het idee van advertenties op mijn mobiel over het algemeen een goed idee

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

4. Gebruik maken van advertenties op een mobiel vind ik een goed idee

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

5. Gebruik maken van advertenties op een mobiel is een slim idee

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 3 - Irritation/Intrusiveness (ITR)

6. Ik vind advertenties op mijn mobiel irritant

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

7. De inhoud van advertenties op mijn mobiel vind ik vaak vervelend

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 4 - Personalization Benefits(PER)

8. Ik ervaar advertenties op mijn mobiel als een persoonlijk bericht naar mij toe

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

9. Ik vind dat advertenties op mijn mobiel doorgaans goed zijn aangepast aan mijn persoonlijke activiteiten

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

10. De inhoud van advertenties op mijn mobiel is gepersonaliseerd

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 5 - Locatability Benefits (LOC)

11. De informatie die ik krijg op mijn mobiel gebaseerd op een specifieke locatie (via GPS) geeft mij toegang tot relevante informatie wanneer ik dat nodig heb

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

12. Met de informatie die ik krijg op mijn mobiel gebaseerd op een specifieke locatie (via GPS) kan ik relevante informatie raadplegen op de juiste locatie

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

13. De informatie die ik kan krijgen op mijn mobiel gebaseerd op een specifieke locatie (via GPS) kan mij toegang geven tot de juiste informatie/diensten op het juiste moment

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 6 - Risk beliefs (RSK)

14. Over het algemeen vind ik het riskant om persoonlijke informatie aan bedrijven te geven

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

15. Ik heb over het algemeen een veilig gevoel bij het delen van persoonlijke informatie met bedrijven in ruil voor gepersonaliseerde aanbiedingen

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

16. Er bestaat een grote kans op nadelige gevolgen als ik persoonlijke informatie deel met bedrijven

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

17. Het verstrekken van persoonlijke informatie aan bedrijven zou veel onverwachte problemen kunnen opleveren

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

18. Er is te veel onzekerheid wat betreft het verstrekken van dit soort persoonlijke informatie aan bedrijven

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 7 - Intentions to use mobile advertising (INT)

19. Ik zou van aanbiedingen en/of service van bedrijven op mijn mobiel gebruik maken als ik de kans kreeg

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

20. Als ik een aanbieding op mijn mobiel ontvang ben ik van plan die te gebruiken om te winkelen

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

21. Ik verwacht dat ik kortingen en aanbiedingen op mijn mobiel zal gebruiken als ik aankopen ga doen

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 8 - Consumer privacy concern (PRC)

22. Ik ben terughoudend bij het geven van informatie aan bedrijven met betrekking tot mijn persoonlijke voorkeuren

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

23. Ik ben bezorgd over hoe anonieme informatie, die verzameld wordt over mij (automatisch verzamelde informatie die mij niet kan identificeren als persoon zoals netwerkinformatie, telefoonprovider, etc.) wordt gebruikt

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

24. Ik ben bezorgd over hoe niet-identificeerbare informatie die verzameld wordt over mij (informatie die ik vrijwillig heb gegeven en mij niet persoonlijk zou kunnen identificeren zoals postcode, leeftijd en geslacht) wordt gebruikt

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

25. Ik ben bezorgd over hoe persoonlijk identificeerbare informatie, die verzameld wordt over mij (informatie die ik vrijwillig heb gegeven en KAN worden gebruikt om mij te identificeren als individu zoals naam, afleveradres en bankgegevens) wordt gebruikt

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 9 - Coupon proneness (CPP)

26. Gebruik maken van (kortings-)coupons geeft me een goed gevoel

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

27. Als ik (kortings-)coupons gebruik heb ik het gevoel dat ik een goede deal krijg

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

28. Ik maak graag gebruik van (kortings-)coupons, wat de hoeveelheid korting ook is

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

29. Ik heb favoriete merken/producten maar koop meestal de merken/producten waar ik (kortings-)coupons voor heb

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

30. Als ik voor merken/producten een (kortings-)coupons is het waarschijnlijk dat ik voor die merken/producten kies

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

31. Coupons hebben er in het verleden voor gezorgd dat ik producten kocht die ik anders niet zou hebben gekocht

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

32. Afgezien van het geld dat ik bespaar geeft het verzilveren van coupons mij een gevoel van vreugde

Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
O	O	O	O	O

Deel 10 – Vragen m.b.t. study 2 – experiment

33. Welk van de volgende aanbiedingen zou u over het algemeen het meeste aanspreken als u aan het winkelen bent?

- Een gratis geschenk
- Een kortingscoupon
- Geen van beide

34. Welke informatie zou u graag op uw mobiel willen ontvangen/kunnen vinden? (U kunt meerdere opties selecteren die voor u relevant zijn)

- **Betalen via mobiel** (uw mobiel fungeert hierbij als een soort digitale pinpas bij de kassa)
- **Een interactieve plattegrond** (die aangeeft waar u bent en u helpt navigeren door de winkel)
- **Algemene informatie** (bijvoorbeeld: waar info desks zich bevinden, openingstijden, etc.)
- **Relevante advertenties** (producten/merken die in de aanbieding zijn in de winkel/het gebied waar u zich bevind)
- **Een chat functie (**die u ondersteunt en helpt bij het winkelen)
- **Een digitaal winkelmandje** (u scant de barcode van de artikelen die u wil hebben en deze worden z.s.m. bij u thuisbezorgd)

Hartelijk dank voor het deelnemen aan dit onderzoek! De resultaten zullen worden gebruikt om uw winkel ervaring in de toekomst te verbeteren en u zo goed mogelijk van dienst te zijn.

Heeft u nog vragen of opmerkingen?

Wilt u op de hoogte gehouden worden van dit onderzoek? Vul dan hieronder uw e-mailadres in. (Wij zullen geen misbruik maken van uw gegevens door u spam te sturen, uw gegevens door te geven aan derden of uw gegevens voor andere doeleinden te gebruiken)

Appendix C - Loadings and Alpha of Survey Instruments, Extracted from literature

Label	Question	*Extracted from consulted literature* - Loadings	Alpha
Information Influence (INF)			0.72
INF1	I feel that Location-based services are a good source of timely information.	0.89	
INF2	location-based services can provide the information I need.	0.88	
Attit*ude towards mobile advertising (ATT)*			0.84
ATT1	I like the idea of using mobile advertising.	0.87	
ATT2	Using mobile advertising is a good idea.	0.83	
ATT3	Using mobile advertising is a wise idea.	0.91	
Irritation/intrusiveness (ITR)			0.71
ITR1	I feel that mobile advertising is irritating.	0.89	
ITR2	Contents in mobile advertising are often annoying.	0.92	
Personalization benefits (PER)			0.83
PER 1	I feel that mobile advertising displays a personalized message to me.	0.78	
PER 2	I feel that mobile advertising is personalized for my usage.	0.91	
PER 3	Contents in mobile advertising are personalized.	0.91	
Locatability Benefits (LOC)			0.89
LOC 1	With location-based service, I am able to get up-to-date information/services whenever I need to.	0.81	
LOC 2	With location-based service, I am able to access the relevant information/services at the right place	0.82	
LOC 3	With location-based service, I am able to access the relevant information wherever I want to.	0.79	

Risk Beliefs (RSK)			0.85
RSK 1	In general, it would be risky to give personal information to companies.	0.75	
RSK 2	I would feel save sharing personal information with firms in return for personalized offers.	0.61	
RSK 3	There would be high potential for loss associated with sharing personal information with firms.	0.84	
RSK 4	Providing online firms with personal information would involve many unexpected problems.	0.70	
RSK 5	There would be too much uncertainty associated with sharing personal information with firms.	0.73	
Intention (INT)			0.89
INT 1	I will use mobile advertising whenever I have the chance.	0.90	
INT 2	I intend to use mobile advertising for shopping if I receive it.	0.90	
INT 3	I expect to use mobile advertising to purchase after receiving it.	0.92	
Privacy Concern (PRC)			0.76
PRC 1	I am sensitive about giving out information regarding my personal preferences.	0.77	
PRC 2	I am concerned about sharing anonymous information (information collected automatically that cannot identify me such as network information, operating system, etc.) that is collected about me.	0.81	
PRC 3	I am concerned about how my personally un-identifiable information (information I have voluntarily given out and cannot be used to identify me like zip code, age, gender, etc.) will used by firms.	0.74	
PRC4	I am concerned about how my personally identifiable information (information I have voluntarily given out and CAN be used to identify me as an individual like my name, shipping address and bank account information will be used by firms.	0.65	
Coupons Proneness (CPP)			0.95
CPP1	Redeeming coupons makes me feel good.	0.85	
CPP2	When I use coupons, I feel like I'm getting a good deal.	0.82	
CPP3	I Enjoy using coupons, regardless of the amount I save by doing so.	0.71	
CPP4	I have favorite brands/products, but most of the time I buy brands I have a coupon for.	0.75	
CPP5	I am more likely to buy brands/products for which I have a coupon.	0.82	
CPP6	Coupons have caused me to buy products I normally would not have bought.	0.76	
CPP7	Beyond the money I save, redeeming coupons gives me a sense of joy.	0.77	

Appendix D - Loadings and Cronbach's Alpha of Measured Survey Instruments in Study 2

Label	Question	Loadings	Alpha
Information Influence (INF)			0.84
INF1	I feel that Location-based services are a good source of timely information.	0.93	
INF2	location-based services can provide the information I need.	0.93	
Attitude towards mobile advertising (ATT)			0.89
ATT1	I like the idea of using mobile advertising.	0.92	
ATT2	Using mobile advertising is a good idea.	0.93	
ATT3	Using mobile advertising is a wise idea.	0.86	
Irritation/intrusiveness (ITR)			0.86
ITR1	I feel that mobile advertising is irritating.	0.94	
ITR2	Contents in mobile advertising are often annoying.	0.94	
Personalization benefits (PER)			0.71
PER 1	I feel that mobile advertising displays a personalized message to me.	0.69	
PER 2	I feel that mobile advertising is personalized for my usage.	0.86	
PER 3	Contents in mobile advertising are personalized.	0.86	
Locatability Benefits (LOC)			0.89
LOC 1	With location-based service, I am able to get up-to-date information/services whenever I need to.	0.90	
LOC 2	With location-based service, I am able to access the relevant information/services at the right place	0.91	
LOC 3	With location-based service, I am able to access the relevant information wherever I want to.	0.89	