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Location-based Mobile Marketing

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Abstract

The sweeping impact of the tech world on everyday functions of our lives in the past several years is very well understood. Much of what is acknowledged to be the virtual platform for people to express themselves has become an inseparable part of the modern human identity that takes comfort and joy in offering their sense of individualism and therefore demand an entitlement to being globally approved and emotionally recognized. The binding essence of the modern age we know called the internet has taken notions as anonymity and turned them into exposure at great pace. The facilitation that is brought by the internet is not only a gift of internet itself but also a gift of its products. Every consumer of any background, any race or nationality is leaving a trace of digital identity behind as they make transactions in the online and offline world of business. The usage of this data is nowadays an essential part of marketing the products that are introduced to consumers on daily basis.

According to the literature review on the subject of location-based mobile marketing, there is a significant gap in the research regarding the issue. This gap is identified to be more leaning towards the user-centric approach rather than the technological one.

Based on this information, the author aims to answer the question: “*what are the implications of location-based advertising in mobile marketing?*” By answering this question, the author will provide the necessary framework through which the findings of the survey can be generalized to the larger population of mobile users while providing data from secondary sources in order to justify the claims of analysis and thus make suggestions for marketers in a practical way of thinking as well as recommendations for future research.

The analysis of the findings includes the four aspects of users’ awareness of location services, popular connectivity types, popular incentives types and the effect of incentives on users’ attitude towards location-based mobile marketing.

The findings indicate that mobile users’ awareness about location services is questionable. Wi-Fi can be dubbed as the most popular type of connectivity. Cash rewards and store credit are first and second in most interesting types of incentives; and finally, incentives affect the mobile users’ attitude towards location-based mobile marketing in a positive way.

Keywords: *big data, incentivized ads, location-based advertising, location-based mobile marketing, smartphone*

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List of Abbreviations

CRM	Customer Relationship Management
CTR	Click-through Rate
EGNSSA	European Global Navigation Satellite System Agency
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
LBA	Location-based advertising
LBM	Location-based Marketing
LBS	Location-based Services
MMS	Multimedia Messaging Service
NFC	Near-field Communication
OS	Operating System
ROI	Return of Investment
RTLS	Real-time Location Systems
SMS	Short Message System

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1. Introduction

In this chapter, we introduce the subject of location-based marketing and advertising and go over the background of the location-based services as well as discussing the problem and therefore founding the basis of the purpose of the research.

1.1. Background

According to Firth, time and time again, technology has proven us that the barriers of limited communication are one by one removed and therefore human beings have been able to transcend into a state of seamless interaction that allows for limitations of physical space to be overcome especially in the terms of information. The role of mobile devices as locative media is not genuinely a new topic as the core idea suggests (Firth, 2015). We have been long using GPS functions in various tools as simple as one our most convenient ways of travel which is our personal cars (Firth, 2015). Location-based services have been becoming more attractive as they are seen as the means to revolutionize mobile communications and target the users with ads that are founded on personalized context (Dhar & Varshney, 2011).

With the tremendous growth of mobile use worldwide, mobile apps have come to undertake the functions of location-based information to their benefit (Firth, 2015). One of the prominent examples of such functionality is Yelp; thus such apps as Yelp and Google Maps have been able to apply location awareness as the basis of the service they provide (Firth, 2015).

The commercial indications of location awareness for mobile advertising is one that pursues additional revenue generated by using the same infrastructures in order to maximize the ROI by applying strategic marketing practices that keep the cost minimum to the mere digital application of marketing tactics. To be precise, the value for marketing using location-based technology does not restrict itself to only advertising but also the whole process of marketing; from development of the service or product to the final assessment of the brand by monitoring the user interaction (Verrinder, 2011). This procedure provides a chance for marketers to zoom in on the trends left behind by the users so that they can reap the analytical information for continuous improvement of ads and what they promise (Verrinder, 2011).

According to a report by the European Global Navigation Satellite Systems Agency in 2017, the revenues of context-aware smartphone apps will reach €30.6 billion by 2019 from the €11.7 billion in 2015. The largest regional LBS market since 2011, Asia-Pacific took up to 50% of the global LBS shipments in 2016 amounting to roughly 1

billion devices. North America accounted for 320 million and the EU for 200 million in the same year (EGNSSA, 2017). The following chart, shows the global shipment of GNSS (Global Navigation Satellite System) as a whole:

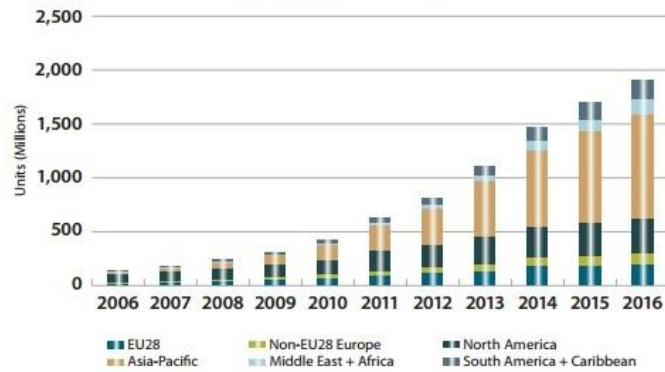


Figure 1. Shipments of GNSS devices by region (2017)

Not only the significance of shipment of LBS-capable devices is worthy of attention, but also considering the fact that mobile devices outnumber the share of other devices is essential. The large number of mobile devices, indicates the opportunity for developers of apps to apply the economies of scale more effectively. Driven by context-aware smartphone app market, the revenues relative to GNSS rose from €150 million in 2010 to €5 billion in 2016 (EGNSSA, 2017). The chart in the next page shows the shipping share of other devices capable of providing location-based services on a global scale:

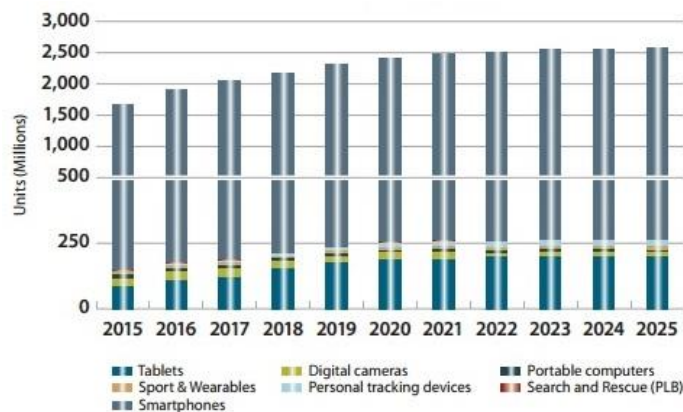


Figure 2. Shipments of GNSS devices by type (2017)

Location-based services also bring a lot to table for the user experience. From this standpoint, the users are welcomed with high-quality engagement that has clear methods to drive user experience (Rao & Minakakis, 2003).

The importance of providing services that apply location-based services lies in the growing user interaction with location data through mobile devices. A survey done in the US found that 74 percent of adult mobile owners use their phones to find information about their surrounding space (Zickuhr, 2013); such implications led for communication scholar Adriana de Souza e Silva to come up with the notion of “hybrid space” as an indication of how location-based services as a digital platform merge with the physical environment that surrounds us (Firth, 2015). According to de Souza, a hybrid space is formed by three main elements; social interaction, digital information and physical space (Firth, 2015). These three elements are intertwined in a way, that the digital information becomes an inseparable part of the physical space because of user interaction as a binding factor (Firth, 2015).

1.2. Problem

The location-based advertising on mobile devices has been studied with the use of MMS and SMS services; this is largely due to the fact that these tools were among the first to be incorporated in LBA as the most traditional and acceptable ways of reaching customers on location-based terms of marketing (Bauer & Strauss, 2016). On the other hand, many publications have contributed to researching the web-based advertising relative to the location of the customers. Research on web-based advertising may be very different when discussing the reach for mobile users while application of LBA in mobile as this type of advertising is directly related to the users’ current location (Bauer & Strauss, 2016). Namely a mobile device is a much more personal device compared to a computer (Abowd, 2012) and the possibilities of adaptation on mobile devices is more versatile (Yuan & Tsao, 2003).

A survey carried out by Skyhook found that 80% of app users understand that location is essential to selected app experiences and 40% of the users tend to turn their location services setting off chiefly because of privacy concerns (Ward, 2016). A recent study at Carnegie Mellon University found that the location of some users was shared more than 5000 times a particular space over the course of two weeks without them ever knowing about it (Ward, 2016). Tony Costa, a principal analyst at Forrester, claims that if people are being tracked in a retail store and know nothing about the exchanged value or what they are compensated for in return, it is beyond an invasion of privacy (Ward, 2016).

Other than users' privacy concerns as an issue, acquiring correct location information from users' mobile devices is of great importance. As Ken Parnham, the general manager for Europe@Near indicates, the main challenge for location-based advertising is obtaining accurate location data and to match users across multiple data sources. He adds that on an industry level, standardization on a bigger scale to keep data reliable and accommodating the increasing number of data providers help overcome the barriers of LBA (Ward, 2016).

A lack of accuracy standards as well as market education in terms of what certain data needs to be pulled with consideration of important data elements, misinterpretation of location data, fresh data or stored data, overwhelming data as a result of dense population such as multi-story buildings and speed as a factor for tracking the user device are some of the challenges in obtaining accurate location data according to Mobile Marketing Association (Ward, 2016).

While accessing location data, given the technological advances that have been made, might be easy, reaching the approval of consumers could prove difficult. A study by Boxever, a customer intelligence firm in the travel industry, showed that while 60% of consumers want offers that are relative to their location and what they're doing, a margin of 62% expressed that they do not approve of brands tracking their location (Surgue, 2015).

1.3. Purpose

In line with the current challenges regarding the application of location-based advertising in mobile marketing and the limited number of user-oriented studies carried out by publications, this thesis is tailored to focus on the user attitude towards LBA in mobile devices. From this viewpoint, we will accommodate users' demands for the exchange of the data that they'd be knowingly sharing with marketers in a sense that advertisement is not meant for bombarding the consumer with ads, but rather structured to provide incentives to represent a real value for adherence of mobile users to campaigns designed by marketers.

It is crucial to mention that the purpose of this research is to help with the current lack of studies that focus on the users' opinion of location-based mobile marketing. While measuring attitude, the author aims to find a relationship between the role of incentives and the acceptance of location-based mobile marketing. In other words, permission or

privacy for that matter is regarded as a barrier which can be overcome by using incentives as a motivator for mobile users to willingly share their location.

1.4. Perspective

This study aims to shape an understanding on what users believe the location-based mobile marketing should bring to the table as big data continues to grow and dominate every aspect of marketing and advertising. From this viewpoint, it is more about the awareness that users have about their location data being used and what they would or would not ask for in return for the trail of information they leave behind.

As location-based mobile marketing has seen a fair share of research in technological sense, it is vital to bring the research forward by applying the possibilities of technological advancements in studies that present these developments to the practical dimension of driving and generating revenue.

2. Frame of Reference

In this chapter, we explain the science behind location-based services and its application in various fields of digital marketing and case studies in order to justify the methodological approach chosen for obtaining the survey data in the methodology chapter.

2.1. Big Data

The digital platform provided by internet on which millions of users share their data, has given birth to the phenomenon of big data (Purcell, 2013). Big data comprises of three types of data; structured data, semi-structured and unstructured data. Structured data are the formatted data used in database management systems. Semi-structured and unstructured data include the non-formatted data that come from multimedia and social media content (Purcell, 2013).

The surge in information gathering will carry on to go up more than 2.5 quintillion bytes of data being collected now every day (Statler, 2016). The other moving factor in big data is the emergence of the Internet of Things (IoT) by embedding tremendous amount of sensors in every day tools such as cell phones, vehicles and vending machines to industrial machinery, smart meters, retail stores and so on. The amount of data stored by tech giants such as Google, Microsoft, Amazon and Facebook is astonishing (Statler, 2016). Facebook as an example, claimed in 2010, that it had the world's largest Hadoop cluster with 21 petabytes of storage. By mid-2012, their storage of data increased to 100PB as the company was processing 2.5 billion pieces of content and over 500 terabytes of data every day. Facebook reached an amount of 600PB by early 2014 (Statler, 2016).

Business intelligence and analytics have become an essential part of today's corporations and academic institutions. An IBM Tech Trend Report from 2011, found that business analytics was among the four major trends in technology (Chen, et al., 2012). In other survey by Bloomberg BusinessWeek, it was indicated that 97 percent of corporations whose revenues exceeded an amount of 100 million dollars, used some form of business analytics in their operations (Chen et al., 2012). The growth of big data analytics in businesses is so fast and dominating that according to Mckinsey Global Institute, the US alone will face a shortage of 140,000 to 190,000 people with deep knowledge of analytical skills as well as a lack of 1.5 million managers who possess the skills to use and analyze big data in order to enable effective decision making (Manyika et al., 2011).

As many companies are planning to capitalize on this huge flow of data, they are building data-center infrastructure on a massive scale to be able to store all of it. Therefore, the analytics that we have come to know as big data is a must have core competence of any business that wants to stay relevant in today's commercial world (Statler, 2016). The data generated from web site click-stream made the need for big data analysis tools and techniques clear and now with beacon technology is creating sensor events that correspond to foot-stream data that bring about more opportunities as well as challenges in this field (Statler, 2016).

Such findings prove that undertaking a proper application of data analysis in business models can highly affect the end result of corporate well-fare and that's why this study is focusing on location metadata as the means for targeted mobile advertising.

2.2. Location-based Services

Some of the definitions for location-based services in the related literature can be found below:

"Location Based Services are information services accessible with mobile devices through the mobile network and utilizing the ability to make use of the location of the mobile device." (Steiniger et al., 2006, p. 2).

"Location-based services (LBS) are the delivery of data and information services where the content of those services is tailored to the current or some projected location and context of a mobile user." (Brimicombe, 2009, p. xiii).

"Location-based Services are IT services for providing information that has been created, compiled, selected, or filtered taking into consideration the current locations of the users or those of other persons or mobile objects."(Küpper, 2005, p. xi)

2.3. Applications of LBS

There are a number of fields that location-based services can be implemented given the proper platform is provided. Some of these functions as navigation has been long applied in everyday use and some of them as marketing and social media has been seeing growth in the past years. A futuristic concept in which LBS can provide the most innovative element is augmented reality. In this section, we go over these categories (Steiniger et al., 2006).

Emergency Services:

Evidently, the use of location-based services in emergency services and first-aid assistance has been long known to be one the most effective ways to react as quickly as

possible to the persons injured in accidents that for reasons of trauma or distress are unable to pin-point their location to ask for medical help. This includes both public and private emergency services for pedestrians and drivers. With regulation of public services by public organizations, the emergency roadside assistance for drivers appears to be one of the promising assistance services for operators in terms of revenue (Steiniger et al., 2006).

Navigation Services:

As one of the most common services made possible through LBS technology, navigation is largely based on mobile users. The mobile network's ability to locate a mobile user can be presented in a number of navigation-based services (Steiniger et al., 2006).

Information Services:

Getting help with navigation, accessing traffic information, finding the nearest service spot or obtaining the city map are just a few examples of location-based services. These location-based services are mostly the digital distribution of location information based on user location, specification of time and user behavior. A prime example of these services is tourist guides and travel services that provide the information for nearby point of interest whether they're historical monuments or restaurants that are in the vicinity of the user (Steiniger et al., 2006).

Tracking and Management Services:

A common example of application of location-based services in tracking and management systems is its use in logistics as for companies to have exact details of their packages. From a management perspective, tracking vehicles such as ambulances gives the chance for operators to manage the calls in shortest amount of time possible. Companies with field personnel can use tracking to dispatch engineers or salespeople to customers in area to deliver a quick-response service. It also makes for a great opportunity in supply chain management to apply mobile supply chain management (Steiniger et al., 2006).

Billing Services:

Location-smart billing service gives the mobile location service provider the ability to dynamically charge the user of a particular service based on location when accessing the various types of services (Steiniger et al., 2006).

Augmented Reality:

With augmented reality being one of the trends in the current perspective of tech, the application of location-based advertising incorporated with augmented reality is a promising field for advertisers and marketers. With computer generated graphics intertwined into real imagery on our mobile devices, the line between the two will be blurred even more. The entertainment business is already seeing growing interest in investing in virtual reality gadgets that plan to alter the world of digital entertainment tremendously (Steiniger et al., 2006).

2.4. Components of Location-based Services

According to Ashwini and Usha, in order to provide the platform for location-based services, there are five basic components needed to build the infrastructure for LBS (Ashwini & Usha, 2014):

- **Mobile Devices:** A tool for the user to request information. Basically any device with location-enabled hardware such as cellphones, cameras, laptops and so on that can receive information in from of speech, picture, text and etc (Ashwini & Usha, 2014).
- **Communication Network:** The mobile network plays an important role in LBS by transferring the data from the mobile terminal to the service provider and the requested information from service provider to the mobile device user (Ashwini & Usha, 2014).
- **Positioning Component:** For the requests that are transferred by the mobile network to be processed, the service provider needs to find the location of the mobile devices. Depending on the users' physical surroundings, a range of technologies from Global Positioning Systems (GPS) for outdoor positioning, or active badges, radio beacons for indoor positioning can be used. Manual specification of location by user is possible when automatic positioning cannot be determined (Ashwini & Usha, 2014).
- **Service and Application Provider:** The service provider offers a range of services to users; namely, calculation of position, finding a route, searching through yellow pages relative to location and searching for information on objects of interest for the user (Ashwini & Usha, 2014).
- **Data and Content Provider:** The data requested by the user is maintained and stored by the service provider and by the industry partners and maintaining

authorities who provide location-based information (Ashwini & Usha, 2014).

Here are the basic components of LBS:



Figure 3. The Basic Components of LBS

2.5. Marketing Services in LBS

Location-based services that can overtake a marketing role are categorized into two major types in accordance with the information delivered to the user:

- Pulls services deliver the information that are directly requested by the user. An example could be a user typing in the address of a certain website into the address field of the browser. Pull services can be further classified as functional services like calling a taxi or looking for a restaurant in a specific neighborhood as an example (Ashwini & Usha, 2014).
- Push services deliver information that are not requested by the user or are request in an indirect way which are activated by an event be it a location or time element. The information that is indirectly requested could be for instance, a news subscription for a city due to location, advertisement or warning messages. Push services are more complex to establish as they are not bound by previous user interaction with the device (Ashwini & Usha, 2014).

2.6. Positioning Techniques

Positioning techniques can be classified into two groups (Ashwini & Usha, 2014).:

1. Network-based Positioning: To track and evaluate user location, the base network station is used. In this system, the device is sensed by the network; it could also be the one sending the signal to the network (Ashwini & Usha, 2014).
2. Terminal-based Positioning: The location is determined by the user device based on the signals received from the base station. Global Positioning Systems (GPS) fall under this category (Ashwini & Usha, 2014).

The implementation of the positioning techniques can be carried out in two ways; self-positioning and remote positioning. When the receiver makes an appropriate measurement from transmitters that are geographically distributed and uses this measurement to determine its location, it is a self-positioning approach. Remote positioning can be defined as when signals that are sent to and back from a set of receivers are measured (Ashwini & Usha, 2014).

2.7. Location Technologies

The two means of location determination in cellular networking are referred to as network-based location and cell ID look up. In cell ID approach, this method uses the cell ID that the mobile device detects in its constant communications with the cellular base stations (Statler, 2016).

The data for large number of cell IDs and their geographical information are collected either by crowdsourcing or network operators. Some providers of cell ID location services include Google, Rx Networks and LocationSmart (Statler, 2016). These services take advantage of databases that contain the coordinates of more than forty million cell sites that are deployed around the world. Using cell ID look-up, devices that cannot be tracked using GPS or other means are locatable. However, a device must have the special programming or the application installed for the information to be looked up in a database (Statler, 2016).

The cell ID method is an active procedure from the standpoint of the device that is being located. This means that the installed application or the embedded program built into the OS of the device need to be constantly collecting and reporting its cell ID information to the service provider or the provider of the application (Statler, 2016).

Network-based location method uses near real-time information within the network about which cell sites are communicating or have communicated with the mobile device that is to be located. In contrast with the cell ID method, network-based location method does not require the mobile device to have any pre-installed application or embedded programs to do any form of processing (Statler, 2016).

The mere functionality of the device, meaning being turned on and connected to the network is enough for its location to be determined. Since location tracking in network-based technology requires the mobile device only to play a passive role, the user's consent in allowing the service provider to use their location data especially for commercial goals is an essential factor. Therefore, mobile device users are asked at the

point of making connection to the network whether they allow service providers to access their location data (Statler, 2016).

A fairly new phenomenon in location-based services is beacon technology. Beacons can be installed on surfaces such as walls and shelves as well as being embedded in devices such as ATMs and vending machines or even products or packaging (Statler, 2016).

Some of what beacon technology was meant to be could be portrayed as a science-fiction story like what the world saw in the film *Minority Report* with Tom Cruise. This makes one to wonder about the possibilities of beacons not in terms of technology but the evolution of the ecosystem surrounding this technology. Imagine shoppers being welcomed by their name with messages containing products that are based on their taste and demographics (Statler, 2016). Customers walking into coffee bars are taken in with their name being called out offering “the usual” on their first visit and the ability to make invisible payments without the need for physical money or money related items like credit cards or as such. Smart displays at gas pumps start playing a favorite tune of the customer as they exit their car to reach for the pump nozzle and just before that, they see an infotainment (Statler, 2016). Arriving at the restaurant could be greeted by concierges guiding you to your seat even though it is your first time there. Having got access to a list of your dietary preferences, the restaurant provides you with relevant menus and special offer of the day. Waiting in such circumstance will become if not obsolete, a fading element. Airport travelers can be assisted by the ground crew in finding the right gate for their luggage or the greeting family members could be informed if there are inconveniences in the customs process when the information is not necessarily shown on the information boards (Statler, 2016).

According to a report by NFC World in 2016, Gimbal has announced that they are working on a beacon firmware that will turn any device with Bluetooth Low Energy to act as a beacon. The main purpose of a beacon is to send signals that can be picked up mobile devices in its surroundings (Statler, 2016). When the mobile app that is programmed to receive beacon signals is present in a radius of inches to 50-75 meters of the beacon, the app reacts and starts communication with the beacon. This communication provides the opportunity to contact the user with an event, typically a message such as an ad, offer or other form of information (Statler, 2016).

A beacon platform consists of hardware, software and mobile apps that are able to recognize beacons' presence in particular locations (Statler, 2016):

- Beacons – Hardware includes one or more beacons that placed in several locations in or around a particular area both indoors and outdoors. They can also be embedded in displays, fixtures, PCs and other devices using a USB port (Statler, 2016).
- Integrated Apps – An app that is capable of recognizing beacons when in their vicinity. The apps may include a retailer app or brand; also third-party apps such as RetailMeNot or Shazam; social media apps can also function this way (Statler, 2016).
- Beacon Management Software – As the title suggests, the software allows the beacon owner or its partner to monitor, supervise and configure the status of beacons. Specification of unique identifiers and range as well as monitoring battery life and so on are examples of use for management software (Statler, 2016).
- Proximity Engagement Software – Allows the beacon owner or agency partner to set up and manage campaigns. The campaign will the app what to do once the beacon signal communication has been established. For instance, first-time visitors can be welcomed by being offered a 25% discount offer; returning guests to be offered a link to a loyalty program (Statler, 2016).

One of the major players in tech that got many investors excited about beacon technology was Apple. iBeacon did not aim to define everything in the field at the time for a solution but was in fact introduced with some gaps in between the strategy that were the incentives for other businesses to try and fill those gaps and create value so that an ecosystem suitable enough for the emergence beacon technology. While there is a lot of attraction coming to iBeacon, the full impact of this technology is yet to be understood (Statler, 2016). The extent of these implications go beyond the current Bluetooth players, stream of ingenious ideas from software companies and advertisers who are more than excited to take on the beacon technology as the tool of the future for digital promotion of products and services. One of the uses of iBeacon is implementing a proximity trigger for the purpose of marketing or other forms of automation. One key element to pave the way for beacon technology to flourish is the OS supplier. While they can open up doors to great opportunity for developers, they also possess the power

to shut out any unwanted factor from the ecosystem (Statler, 2016). They can cut off or change services that developers relied on or start competing in the fields that they were partners before. The vital role of the OS provider becomes clearer when we understand that they need to create a technical equilibrium, accuracy, responsiveness, address privacy issues, where to impose rules and regulations and where to allow for the freedom of ideas to leave room for the community to contribute to innovation (Statler, 2016).

The Bluetooth beacon ecosystem is vast and large. Beacon costs are low and they offer many options. Many Wi-Fi access providers are embracing Bluetooth beacon technology as an added component for which they can charge enterprises. A company like Cisco is taking advantage of beacons to incorporate this technology in their Wi-Fi positioning systems to increase accuracy for a lower cost and also increase flexibility as a result of higher density in number of access points (Statler, 2016). Aruba switched to Bluetooth by completely dropping Wi-Fi as basis for their Meridian RTLS systems. This was due to issues regarding the association of Wi-Fi networks in effective tracking of location, cost, accuracy, flexibility, passive monitoring of Probe Requests issue and a perception that Bluetooth has a better privacy story. With a large trusted sales force and a powerful installed base, the reason for Wi-Fi service providers to aim for adopting beacon technology into their business is very clear (Statler, 2016).

Another emerging and prominent form of location-aware technology is geofencing. “Geofences are virtual perimeters that mark locations in the physical world”, says Stephen Statler (Statler, 2016, p.309). Like beacons, they’re from the same family of location-based communication but they do not demand the deployment of physical hardware the beacons do (Statler, 2016). Geofencing has taken many forms in the years and one could assume that it is as old as the mobile phones that we use every day. In the early years, mobile operators used cell tower identifiers to determine the physical location of the user (Statler, 2016). Early applications included SMS marketing campaigns, tracking of inventory and even law enforcement. There are cases of the release of cell tower data that either helped placing the suspect at the scene of the crime, or prove their innocence of any wrong-doing. The next generation of geofencing will take place on a mobile app level as it does not in fact concern the mobile operator directly but rather uses a range of technologies and techniques to attract customers (Statler, 2016). App-level geofencing should respect the three Ps of mobile: permission,

privacy and preference. By downloading the mobile app, users are showing willingness to work with your company on some level; however, they would still need to allow for location-based services to be turned on meaning they give permission (Statler, 2016). The users are not meant to be tracked continuously in the background. This means that previous location information while entering the geofencing zone is unknown. The mobile device's OS wakes the app up once it has breached the boundaries of the geofenced location. With certain convenient reach to users once permission is granted, it is easy to abuse the amount of content that users are to receive as ads. This means that engagement principle should be strictly on users own terms. If users feel being spammed especially with irrelevant content or that their data is being misused, they can very easily revoke the authorization of location data and delete the app altogether (Statler, 2016).

Geofences can be a very effective tool in informing customers about promotions when they enter a geofenced area. Through push notifications, geofencing allows for the ability to remind the customers of the offers or coupons they had digitally received from before so that they would pay a visit for a good reason (Statler, 2016). Physical interactions at the right time and the right place with immediate value builds customer loyalty and drives sales. An incentivized technique that can be implemented into this value exchange procedure is called random intermittent reinforcement. It is the idea to reward customers with treat once they are nearby (Statler, 2016).

People see this as a random act of kindness and therefore are encouraged to visit your location more often. As there is no mention of this event in the app, the customers see this as a random event and more likely do not expect it to happen all the time (Statler, 2016). This randomness is a perception of the customer when in fact it is a purposeful attempt in marketing and advertisement by segmentation data and rules by the brand. One example of such approach, is targeting a segment of high-value customers who have not made any transactions in thirty days and are in the area right now. When you bring personalization and CRM data into this in a scale single treat options for customers, it can increase significant foot traffic in your location (Statler, 2016).

Apart from technological considerations for the application of Geofencing, there are certain strategic business practices that need to be put in place in order to fully take advantage of the technology (Statler, 2016). Geofences are completely virtual meaning they can be implemented anywhere in the world; as a result, a clever strategy would

placing them near the competitor areas. To know when and how often the loyal customer visits the competitor sites can be a decisive factor in raising engagement levels incredibly. However, sending uncalled push notifications to customers as they arrive in competitor locations could counteract the purpose of the campaign (Statler, 2016). One approach would be sending users these notifications later in the day or even after they have left the location. A better approach would be processing this as an analytic data and then have it show up in the overall customer view. After segmentation of the customers who visited competitive locations against your locations, you can calculate a loyalty score of your own. This way the various campaigns that are run against competitors based on location data can be adjusted and unselective customers can receive newly modified offers and communications to change their previous shopping patterns (Statler, 2016).

After connecting your CRM and loyalty system, it is important to remind the customers of their point they have received and how long they have before they can use them. This can also be carried out by using push notifications when they are at one of your locations to encourage more purchases. If your brand app is capable of a check-in function, it is useful to remind the users of this feature while they arrive at company location for their social media followers to be informed (Statler, 2016). This enables a viral effect of location awareness in social media. Incentivizing these interactions by for example Easter eggs in the app such as social status or virtual currency make for a valid exchange between the user and the app. Inciting a sense of accomplishment and enabling customers to convey their status are two major emotional loyalty switches you can turn on in your customers.

Asking customers about their experience after interacting with your Geofencing campaigns is a necessity for surveying the effects. Later after customers have left your company location, they can be asked in short multiple-choice questions about their experience while on mobile; avoiding request to type in the answers would be wise. The relationship between Geofencing and beacons can be described as a Russian doll. The outer layers, the big dolls can be defined as Geofencing techniques while the inner layers as small dolls could be defined as beacons (Statler, 2016).

When taken as a criteria for segmentation, regional campaigns can be implemented using Geofencing on a larger scale and beacons on smaller one. For instance, if Superbowl is taking place in Miami, geofencing can be used to encourage people in

Florida to buy tickets for the event that occurring in their region (Statler, 2016). Residents of the West coast can be targeted with ads relevant to their region to be informed about the events when beacons cannot be applicable as they're far wide-spread to be in contact for proximity marketing. A sample coexistence of geofencing and beacons is as follows (Statler, 2016):

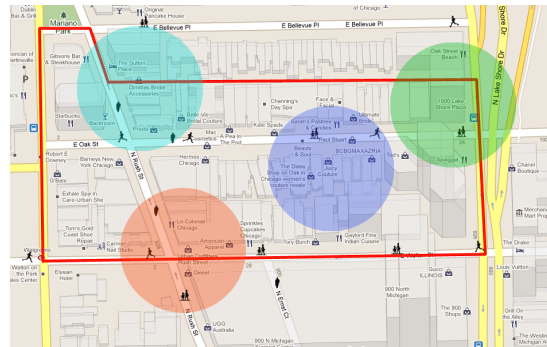


Figure 4. Geofencing mixed with beacon proximity areas

To acquire the right preparation for a successful location-based marketing campaign, it is more likely that you will adopt both beacon technology and geofencing. Beacons can be reliable technology used indoors for understanding granular proximities, once Bluetooth is turned on. On the other hand, Geofences can be applied to much larger areas using Wi-Fi (Statler, 2016). One great advantage of Geofences to beacons is that competitor locations can be geofenced while beacons cannot provide the same service in such locations (Statler, 2016). At the same time, beacons are the way to go, when customers inside a building are to be targeted as geofencing works for areas 100 meters large and above. Steel and concrete used in buildings also hinder the delivering of messages using geofencing (Statler, 2016).

A brief summary of advantages and disadvantages of both technologies are shown below:

Geofences:	
Pros	Cons
Does not require Bluetooth	Requires Wi-Fi
Can cover massive areas	Does not work well inside
Targets location of competitors	Can cover large areas
No hardware purchase or maintenance	
Instant deployment	
Beacons:	
Pros	Cons
Works indoors	Requires Bluetooth
Could be very granular	Can only be deployed in location you control
Reliable	Cannot cover large areas
	Purchase and maintenance required
	Deployment lead-time

Figure 5. A comparison between Geofencing and Beacon Technology

2.8. Location-based Marketing

After going through the technologies used for location-based services and having been made familiarized with how these technologies are meant to be used, it is important to assess the potential of location-based services in marketing and find examples of successful marketing campaigns based on LBS. Location-based marketing is an efficient way to attract customers whether local or happening to be visiting out of area. Not only this approach can be a way of new customer acquisition, but it is also to be taken advantage of for building customer loyalty. The key to getting started in this field, is to provide location-based social networking platforms with relevant, accurate information so that potential customers can find your location of business (Hopkins & Turner, 2012).

Once you're able to have customers reach your doorstep or in other words, increase foot-traffic, many tactics can be laid out to generate more revenue, build loyalty and thus create a faithful sense of credible value exchange (Hopkins & Turner, 2012):

- Promotional discounts and giveaways for initial check-in and repeat visits
- Ongoing promotions where incremental discounts and special prizes are awarded based on the number of customer check-ins
- Targeted promotions through social network sites such as Twitter or Facebook

Running real-time promotional campaigns with customers physically visiting business locations can drastically improve customer feedback and create a word-of-mouth type of advertising by customers sharing their experiences via social media. One of the great features of location-based marketing apart from enhancing customer experience, is being able to target engaged customers at the time they're more likely to make a purchase (Hopkins & Turner, 2012).

In addition to the viral influence and promising convenience that location-based mobile marketing brings to the table, the eco-friendly practices that it encourages simply by putting forth a platform of digital nature, can offer tremendous cuts on use of non-environment-friendly materials such as plastic used in cards or paper-made coupons (Hopkins & Turner, 2012).

In order for a location-based marketing campaign to be successful and achieve the expected results, it is important to set some guidelines that correspond to the current stage of knowledge regarding LBM both from a consumer perspective and business entity alike. As location-based mobile marketing is somewhat a new concept, it is

essential to address the consumer confusion about it (Hopkins & Turner, 2012). Yes technologies like Bluetooth and Wi-Fi are long known by the public but a marketing approach using these tools for approaching the users can raise doubt about the integrity of your business intentions.

It is human nature to be afraid of something we do not understand. It is your concern as the provider of the campaign to ensure secure practices while using data for marketing goals. As not all people live in an actively commercial environment of mobile services, the upholding of users' permission is the first step in making the fact understood that users will only be included in the process if they opt in for receiving messages (Hopkins & Turner, 2012).

This also includes a clear instruction on how to opt out of these notifications to further highlight the good intentions of the business respecting the rights of privacy; however, having users' permission does not mean to bombard them with marketing notifications. There is a fine line between efficient marketing practices and low-value approaches in high numbers (Hopkins & Turner, 2012).

This also means that users who confirm opting in for receiving notifications need to be informed on what sort of content they will be provided with. Being clear and straightforward with your interaction shows the customers exactly the emerging value exchange that they'd be expecting and therefore look forward to (Hopkins & Turner, 2012).

While hinting on these issues, being faithful to the promises made at the opt-in phase significantly increase loyalty. Running test campaigns with survey follow-ups is quite essential for progressive improvement of the campaigns. These test campaigns can be run on small budgets and provide certain incentives for the unbiased participants that give their time for filling out the survey (Hopkins & Turner, 2012).

2.9. Case Studies

As new as location-based mobile marketing can be, there are a number of brands who have already taken the notion of LBM into heart and applied it to their marketing approach. In this section, we go over a few case studies of location-based mobile marketing for some companies.

2.9.1. Dunkin' Donuts

Physical location of a business is a very important decisive factor in driving foot traffic your way but sometimes customers need a little push to come around your store and

explore the offers by taking a closer look.

Thumbvista, a mobile marketing and advertising company had the opportunity to work with the popular donut company, Dunkin' Donuts. Thumbvista, created a mobile display ad campaign with help of geofencing by making use of users mobile devices and their GPS function to draw more foot traffic to the location of the business and therefore increase sales. By designing a geofencing program for a radius up to five miles around the gas station where was the intended destination, the business was able to identify the potential customers' mobile devices within this distance.

Thumbvista also designed a landing page with a coupon embedded for users giving them the option to share the coupon with friends via email or social media. It also provided a link on the navigation map and an Apple passbook coupon for iPhone users with a reminder trigger on for target location. Over a four day period, Dunkin' Donut had 164 people click the link to get the coupon in the target radius. From 12 p.m. to 2 p.m. were the busiest hours. The top day showed a Click-through-rate (CTR) of 76%. This showed that a strong, creative location-based mobile marketing campaign with proper ad incentives and embedded landing pages could drive sales higher than before such a short period of time (Thumbvista, 2015).

2.9.2. Pizza Hut

Pizza Hut is a subsidiary of YUM! Brands, Inc. With more than 6,000 restaurants in the United States and more than 5,000 restaurant locations in 94 other countries in the world, Pizza Hut is the largest restaurant company. Pizza Hut was running oer-based promotions that were raising sales but yet unable to build loyal customer relationships particularly attracting customers who were price-sensitive. This led Pizza Hut to decide for a campaign that was meant to build more customer loyalty and draw in more sales at key restaurant hours.

Pizza Hut started a project with O2, a mobile carrier based in the UK, and a buying agency called Starcom to create a location-based mobile marketing campaign via ShopAlerts platform. The campaign targeted O2 subscribers and invited them to Pizza Hut locations at key restaurant hours. As for the perimeters, half-mile geofences were set up around nearly 340 Pizza Hut locations across the UK and SMS messages were sent to users in the vicinity containing deals for happy hour, lunch buffets and special offers like unlimited salads and *kids eat free*. Each SMS message was dynamically

created in real-time based on the location of the Pizza Hut closest to the subscriber where the price of the deal was relative to the location.

During the course of the campaign, 301,000 test messages were sent to O2 subscribers. The program ran straight for fifteen months on several media channels including Mobile, TV, Radio, ATM and social media platforms like Facebook; above all, mobile was the most successful platform with 142% more efficiency compared to other channels in delivering sales and incremental revenue than the measured campaign average. Mobile was 4.4 time more effective than TV ads and 2.6 times more successful than online campaign (Placecast, 2012).

2.9.3. North American Auto Brand

A major North American auto brand set the objective of a location-based marketing campaign by reaching specific device IDs sources into two categories of Polk and Handraisers. The purpose of the campaign was to raise brand awareness around a number of new car models and leasing information. The process of targeting by Placecast was performed by using Placecast's vast set of point-of-interest data to target around four thousand auto-dealers in auto brands' top 50 DMAs which included competitors as well.

The users within the premises of the geofences around the car dealers were delivered 45 variations of rich media ads that were designed for giving information about several car models, including leasing information. On-click, the users were redirected to landing pages with detailed information about the deals.

For the category of Polk, users who had ad exposure were 1.2 times more likely to visit the store in comparison with users who were never exposed to the ads. As for the Handraisers category, the user exposure made for a 1.5 times likelihood of users visiting the store in comparison with non-exposed users. Ad engagement for Polk category was a rate of 1.17 times of the probability for users to visit the store and the Handraisers category were more likely to visit the store by a rate of 2.12 times the users who never engaged with the ads.

The overall results came to be a high rate of CTRs of over 1% for the brand's own dealer locations as well as its top competitors' locations. The performance by day showed the highest numbers on Wednesdays and from an app perspective, the navigation apps did the best for the campaign (Placecast, 2013).

2.9.4. Flip Flop Shops

With more than 80 stores located across 10 countries in the world, Flip Flop Shops is a global retail franchise that specializes in casual footwear. The case study by Turnstyle took place one of the Flip Flops Shop outlets in Vaughan Mills. This mall has 250 stores in a retail area of 104,000 square feet. The Franchisees, Preet Banipal and Larissa Brumwell wanted to find a way to take advantage of the many number of people who'd be walking past the store or standing around idly. After they found out that they could use guest Wi-Fi to lure in customers in order to generate more leads and engage potential customers, they decided to explore this opportunity further. On average, visitors who connect to a venue's Wi-Fi network stay on 23% longer than users who are not connected; this provides the venues with a significant increase in sales opportunity. Over a course of 8 months, Flip Flop Shops were able to see over 900 unique sign-ins in a single location which is equal to 3.8 new people joining their marketing program every day.

After adding in-store signage to promote public Wi-Fi, that number increased to 5.1 new sign-ins per day which equates to over 1,800 per year. In order to convert the web browsers into buyers, the store offered the users who were signing in with for the first time with a 10% coupon off or a free bracelet for any purchase over 25 dollars. The push notification for this offer was instantly shown to the users upon Wi-Fi authentication and 16.8% of the users redeemed within an hour after receiving it. By achieving these results, Banipal and Brumwell were able to offer free internet access in exchange for valuable contact information from the users who connected to their network and so increasing the growth of their email marketing list. Secondly, it enabled them to drive more foot traffic into their store by immediate coupon offers and shopping limit gifts for the users who successfully connected to their Wi-Fi network (Turnstyle, 2016).

2.9.5. Tokyo Smoke

Tokyo Smoke is a leading Canadian lifestyle brand. Founded by Alan Gertner in 2015, Tokyo Smoke is a company that aims to use offer a unique experience to the sophisticated smokers by elevating the state of mind of its customers. Two months after opening the first Tokyo Smoke shop, Gertner decided to contact Turnstyle as he was obsessed with data and convinced that there are in fact smarter ways to be a good

retailer. Alan wanted to please his customers by going over their expectations and reward them for their loyalty.

By cooperating with Turnstyle, he was able to offer personalized digital coupons to his customers based on their behavior and trigger points. In other words, he wanted to replace traditional stamp card with a digital version that could be kept on customers' mobile devices without the need to download an app. Each user that signed in, received a custom branded message. The campaign consisted of three marketing strategies: digital loyalty cards, first Wi-Fi sign-in and half-off the price of afternoon cup.

Customers who had previously signed into Tokyo Smoke's Wi-Fi would receive a digital stamp, thanking them for visiting and informing them about how many more visits they could make until they received a free beverage. This strategy alone resulted in a 33% rate in redemption of the digital coupons.

For first-timer sign-ins, the offer was instant reward for a \$2 discount on any beverage; a saving of up to 60%. This resulted in a redemption rate of 10%. The third strategy was designed to target the morning visitors in order to encourage them to pay a visit in the afternoon as well. This way, the customers who visited the shop in the morning would receive an immediate coupon for a half-price beverage in the afternoon. This strategy resulted in a redemption rate of 6.4% (Turnstyle, 2016).

2.9.6. Mondelez International & Couche-Tard

Mondelez International is a global leader in food and beverage industry. Mondelez International took the initiative through their Shoppers Futures program, to bring start-ups and retailers together to transform the consumer retail experience. As Sofia Oliveria, Senior Brand Manager at Mondelez International put it: "Our goal was to drive penetration with millennials and find unique and relevant ways to reach them with our products in that moment of purchase for a high impulse category. We were curious to know, how could we effectively grab their attention and then keep them engaged and coming back?"

Together with convenience store powerhouse, Couche-Tard, who owns Mac's and of course the provider of location-based marketing solutions, Turnstyle, Mondelez International was able to obtain valuable information about their customers, delivering highly contextual offers and rewards to increase traffic and purchases. Turnstyle's cloud-based Wi-Fi marketing platform, powered by Cisco Merak access points, enabled

the two retail giants to successfully map, analyze and market to customers, generating a considerable amount in revenue and customer loyalty.

The campaign was launched in a thirty-day period where 6 types of offers were presented to the consumers depending on visit frequency. Logging on to the Wi-Fi would reward the users immediately and simultaneously serve as an opt-in to future communications with Mac's new program. Later visits by customers who already opted-in to the Wi-Fi would make the Cisco Merak Aps to trigger Turnstyle's marketing platform to deliver additional, personalized rewards and offers to customer's mobile devices; all without the need for a mobile application. The offers sent were designed to modify customer behavior by encouraging repeat visits and therefore creating loyalty. Signage outside the store was ensured to inform the customers of the opportunity to score big on snacks. Control, however, was a decisive factor in the experiment. The promotion was only offered in month of January, while December and February acted as baselines.

The results of the campaign were interestingly surprising. Over 3,244 customers opted-in for the program in January; a massive increase of 81% in sign-ins over the prior 30-day period. Driven primarily by signage advertising the campaign. Turnstyle's systems showed that 30% of the customers used Facebook, creating a mine of valuable demographic information for the marketing team. With additional information such as age, gender and visitor frequency, Mac's stores received vital information that enabled them to tailor their future marketing campaign for their primary audience. The most noteworthy results were coupon redemption rates and return on campaign. An approximated amount of 14% of customers who received a coupon redeemed it during the campaign. This is a much better accomplishment than the rate for email coupon redemption which was about 2-3%. Despite the immediate rewards, the customers were more likely to return after an average of three days to redeem their coupons and get their free candy bar, meaning they'd returned for a new visit. Overall the customers returned to their local Mac's 25% more than the time they had before the campaign.

By putting a strict focus on return, Turnstyle was able to demonstrate the full impact of the 25% increase in customer loyalty. By the assumption that an average purchase of \$4, across Couche-Tard's global chain, this approach has the potential to create tremendous revenue through relatively low-cost investment in technology and customer acquisition (Turnstyle, 2016).

3. Methodology

In this chapter, we discuss the methodology of the thesis and the philosophy of our approach for conducting survey to collect the primary data. The author introduces the hypothesis for this study with the help of literature review and aforementioned case studies.

3.1. The Research Question

“What are the implications of location-based advertising in mobile marketing?”

3.2. Literature Review

One important concept in marketing research is attitude (Kotler et al., 2011). The purchase behavior is rooted in the consumer’s attitude toward a certain product. Attitude can be defined as the enduring evaluation of favorable or unfavorable intent, emotions and actions toward a particular object or idea (Kotler et al., 2011). With attitude as a frame of mind for liking or disliking an object, be it a product or service, its role in designing purchase behavior of the consumer is vital that it can economize energy and thought and may be difficult to change (Kotler et al., 2011).

The research approach towards LBA in mobile marketing is mainly a technological approach. So far, there have been only a few number of publications that have taken the users’ attitude towards location-based advertising (researched in 9 publications with surveys and one with a social science experiment)(Bauer & Strauss, 2016). Therefore, the gap in the research spectrum in LBA for mobile marketing lies in a more user-centric approach that identifies the concerns of users while interacting with location-based mobile marketing and advertising (Bauer & Strauss, 2016).

Based on the literature review, this research aims to measure the influence of incentives in encouraging users to have a positive attitude towards location-based mobile marketing while privacy is considered as a potential barrier.

3.3. Delimitations

As a result of the research choices for this work, there are delimitations that influence the scope of the research. Since the survey done by the author will be carried out on online survey platforms, the research is aimed to analyze the users’ attitude towards LBA rather than their behavior. The reason for this, is that measuring the users’ behavior in a real-life situation requires conducting social science experiments that demand the proper funding and infrastructure. The focus will be on users as the literature review specifically indicates that more user-centric on the subject is needed. Also, upon landing on the questionnaire page, the respondents are asked to participate in the survey only in case they possess a smartphone. The reason for this is that although

marketing campaigns based on location can be in fact carried out using Geofences, the wholeness of the concept of location-based mobile marketing is most applicable on a platform that properly corresponds to the most recent progress in technology.

3.4. Methodological Considerations

3.4.1. Definition of Research

“Research is a systematic process of collecting, analyzing, and interpreting information (data) in order to increase our understanding of a phenomenon about which we are interested or concerned. People often use a systematic approach when they collect and interpret information to solve the small problems of daily living. Here, however, we focus on formal research, research in which we intentionally set out to enhance our understanding of a phenomenon and expect to communicate what we discover to the larger scientific community.”(Leedy & Ormrod, 2010, p. 2).

3.4.2. Research Methodology

The purpose of this research is an exploratory study. Exploratory research is useful when one tries to clarify one’s understanding a problem and to answer the question of “what” rather than “how” or “why” (Saunders et al., 2009).

The method for research provides a comprehension of the research by presenting a design backed by a theoretical explanation of its use and value (Saunders et al., 2009). The better the understanding of the choices made, the clearer the path towards answering the research question. In order to realize the basis of the data collection method, we need to form a well-constructed definition of qualitative and quantitative data (Saunders et al., 2009).

The qualitative approach to data collection is a process through which the researcher becomes the explorer of the source of data on a more interactive level and thus enables the researcher to obtain a certain level of detail from involvement in real experiences (Saunders et al., 2009). Furthermore, a qualitative approach is one in which the researcher who does the inquiry, often makes knowledge claims based majorly on constructivist perspectives; In other words, multiple meanings of individual experiences, meanings socially and historically constructed, with an intent to develop a theory or pattern; or advocacy/participatory perspectives (i.e. political, issue-oriented, collaborative or change-oriented) or both (Saunders et al., 2009). It also includes strategies of inquiry such as narratives, phenomenologies, ethnographies, grounded theory

studies and case studies. This way the researcher collects open-minded, emerging data with the intent to create and process a theme for the data (Saunders et al., 2009).

On the other hand, a quantitative approach is one in which the investigator uses primarily postpositivist claims to develop knowledge; as the following examples, cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observations and the test of theories (Saunders et al., 2009). Quantitative research applies strategies of inquiry such as experiments and surveys to collect data on predetermined instruments that yield statistical data. In this scenario, the inquirer sets out to achieve the completion of the meaning of a certain phenomenon from the gathered views of the participants (Saunders et al., 2009).

As the basis for the design of the questionnaire is the secondary data, the mono method is chosen to collect the necessary primary data. Saunders defines the mono method as an approach to data collection in which a single data collection technique and corresponding data analysis procedures are applied (Saunders et al., 2009, p. 151).

A survey is a strategy by which the researcher is able to collect quantitative data to analyze the quantitative data using descriptive and inferential statistics (Saunders et al., 2009). Additionally, survey can help collect the necessary data with the goal to suggest possible relationships between variables in a model (Saunders et al., 2009). A limitation to survey as a strategy to collect data is that it possibly cannot have a wide range as other research strategies (Saunders et al., 2009).

This study is a cross-sectional research. A cross-sectional study sets out to study a particular phenomenon at a particular time. The research done for academic courses are constrained by time (Saunders et al., 2009).

3.4.3. Types of Data

The data collected in this research both include primary and secondary data; primary data defined as the data that is mined and collected by the researcher is gathered by conducting a questionnaire survey. As it is well-known, questionnaire is one of the most used data collection techniques in the survey strategy. Since each respondent is asked to provide answers to a same set of questions, it provides an opportunity to collect data from a large sample prior to quantitative analysis. A questionnaire can be used either for descriptive or exploratory research. A survey can provide the researcher with primary data that can be used in descriptive or inferential statistics. (Saunders et al., 2009).

The questionnaire is designed to collect data that is relevant for answering the research question just as it is relevant to the literature review to create a possibility to compare the empirical findings to that of the previously found data through secondary sources. The questionnaire will be self-administrated carried out via internet. Self-administrated questionnaire are usually completed by the respondents themselves. This method of using self-administrated questionnaire is used to collect the quantitative data. The core of the questionnaire is designed to measure the attitude of mobile users towards acceptance of location-based advertising in mobile marketing based on the predictor variable; incentivized ads. The other element of the questionnaire for the quantitative research include the measurement of the use of location-based app by the respondents and its relationship with their awareness of the function of the location services in settings of their smartphone. This is also accompanied by a third scale of ordinal variables measuring the frequency of the use of different connectivity types and a scale to measure the ordinal preference of the mobile users for different incentives as exchange value.

As for secondary data, quality daily newspaper can contain useful reports regarding takeover bids or companies' share prices. Government departments publish reports with official statistics that cover social, demographic and economic topics. Trade organizations collect data from their members that are aggregated subsequently and published. Secondary data are not only useful in laying the outline for collection of the primary data, but they also provide a criteria by which the primary data findings can be compared and made sense of (Saunders et al., 2009). The sources of secondary data that are chosen for this thesis include case studies, articles published online, journals and surveys done either by researchers or companies that have been in fact engaged in location-based marketing practices as mentioned in the frame of reference. The secondary data are the backbone of the empirical section of this research.

3.4.4 Sampling

The sampling technique chosen for this thesis based on the research question is a probability sampling. Probability sampling is more often associated with survey-based research strategies where the researcher needs to make inferences from the sample about a population to answer the research question (Saunders et al., 2009).

As for the type of probability sampling technique, the author has chosen the simple random sampling as it is used when the researcher has access to a database of potential

responders. Such sampling approach reduces the chance of human bias (Bryman & Bell, 2012).

Danielsoperonline statistic calculator suggests that the author needs 67 respondents for regression analysis with significant results (Danielsoper, 2017). Regression analysis forms the basis for the analysis of the empirical primary data as the author aims to find the strength of relationship between variables, aiming to achieve an argument for a cause and effect relationship based on the nature of the research. More will be discussed about the regression analysis as the variables collected are not numerical in nature but categorical and thus analyzed using rather generalizations of the multiple regression method (Laerd Statistics, 2013).

3.4.5. Credibility of Findings

For a research to be credible there are two criteria by which the evaluation of the empirical findings can be performed; reliability and validity (Saunders et al., 2009). Reliability can be referred to as the extent to which the data collection techniques and analysis procedures applied by the researcher will produce consistent findings. The survey designed here is to ensure that the data that are mined using similar techniques and methods are to arise if these techniques and methods are applied on other occasions and other researchers.

As for the validity, it can be described as the connection that the test as a tool has with that which is the findings; in other words, is the researcher measuring what they are intended to measure. For this, the author has tailored the questionnaire in a way the clear-cut form of wording and placement of the questions require little effort from the respondents' part to put in in order to answer the questions.

3.5. Conceptual Framework

In order to make logical inferences from the research findings, the author has developed a framework based on the literature review and the practical case study findings of location-based mobile marketing companies. As the questionnaire is considered to be the core from which inferences to be made, we dive deep into the concepts and theories that suggest the best guidelines for designing the questionnaire for quantitative data.

The questionnaire designed for collection of the quantitative data aims to receive data on the following main aspects:

1. Users' awareness of location services function.

2. The popularity of most used connectivity types; namely Wi-Fi, cellular data, Bluetooth and near-field communication (NFC).
3. The preferred types of value in exchange for location data; namely cash rewards, store credit, coupons and loyalty points.
4. The role of incentivized ads that provide incentives such as offers and coupons in return for location data.

The popularity of location apps is measured as an initial step to realize whether the sharing of location data is already a resolved issue for the value that merely the function of an app provides. The frequency of most used connectivity technologies is assessed to achieve a better understanding of how marketers can focus on certain types of technology that are already well-known and have proven their worth in order to provide the channel through which the users can be approached.

In general, users' privacy concerns are higher with regards to location-based advertising whereas the perceived benefits and their willingness to use LBA are relatively low (Magedanz & Simoes 2009). As such, the section of the questionnaire about value exchange sets out to evaluate the desire of users for receiving an exchange value and measure their openness to receive types of value categorized as cash rewards, store credit, coupons and loyalty points. In this manner, respondents are aware that apart from the value defined as the mere functionality of the apps, there are other types of value worth their data if they are willing to consciously share location data with marketers and advertisers.

Consumers tend to take a critical view of sharing their location data with marketers and advertisers while they agree to do so with family and friends. However, if the user is given the ability to specify when and for how long their location is to be shared with advertisers, their willingness to do so increases in comparison with a scenario in which they don't have the power to do that (Kelley et al. 2011).

As for the part of the questionnaire aimed at measuring the desire of users to receive incentives in ads for their location data, respondents are questioned about the convenience and the potential encouragement underlying the need for location-based mobile advertisements. According to Bauer, three of the reviewed publications (Ho 2012; Cremonese et al. 2010; Tussyadiag 2012) suggest that discount tickets are more appreciated than informative advertisements (Bauer & Strauss, 2016). It is argued that the perceived benefit is the main driver for mobile advertising from the customers'

perspective. Therefore, advertisers should consider the relevance and the benefit of an advertisement for the targeted audience and only provide meaningful ads based on the data that are collected (Haddadi et al. 2010; Merisavo et al. 2007; Conti et al. 2012; Unni and Harmon 2007). Based on this information, the section about attitude towards incentives is mainly focused on offers and coupons rather than cash rewards and store credit as this is a more realistic, cost-friendly approach for advertisers to run location-based marketing campaigns. The poll on types of exchange value as previously mentioned, is to introduce new grounds on which advertisers can drive even more revenue based on value that includes money as the main marketing factor.

Based on this information, namely the fourth aspect of the research, the following hypothesis is to be tested:

Incentivized location-based mobile adverts positively affect the attitude of consumers who use location apps towards mobile marketing.

On an important note, acceptance of location-based mobile marketing is synonymous with *accept value* in the analysis.

The forming of a hypothesis is an approach through which the research question can be answered. While using inferential statistics to analyze the data, the author sets out to choose the most proper techniques that make sense in statistical terms. This way the results of the survey can be more reliable from an analysis point of view.

In the hypothesis we assume that the users whose acceptance of location-based mobile marketing is at question, are already in fact using location apps actively. These location apps can range from certain navigation apps to apps that can use navigation as a side function to provide a main service like food delivery where the main function is ordering food.

While it is explained how the awareness of the mobile users is meant to be measured by the first aspect of the research, this an essential step in making sure that the hypothesis testing is based on the cause and effect analysis where respondents are actually interacting with location data even if this interaction is limited to the natural function of the apps that use location data.

3.5.1. Testing the Hypothesis

Choosing the suitable statistical tests is a vital step to enable the researcher to correctly assess the hypothesis and make the right interpretation of the data.

To test the hypothesis, a binary logistic regression is performed to evaluate the effect of incentives on the acceptance of location-based mobile advertising. A binary logistic regression predicts the possibility that an observation falls into one of two categories of a dichotomous variable based on one or more independent (predictor) variables that can be either continuous or categorical (Laerd Statistics, 2013).

In this regression, the dependent variable is the acceptance of location-based mobile marketing which is dichotomous having only two values namely yes or no. As for the independent or predictor variable, we have incentives which is measured as a categorical (ordinal) variable. The regression is preceded by a correlation analysis using the Kendall's rank correlation coefficient. The reason to choose this test over Spearman's rank correlation coefficient, even though they're both used for ranked data, is that Kendall's tau is a better choice for tied data as it is the case for this study (Saunders et al., 2009). The reason for this analysis is to measure the correlation between the independent variable and the dependent variable to shed more light on the correlation as well as the possible causation resulting in the regression analysis.

Cronbach's Alpha test is performed to check for reliability of data.

4. Empirical Findings and Analysis

In this chapter, we take an in-depth look into the findings of the empirical research and the analysis of the collected data. The author aims to achieve a proper understanding of the findings in order to form an argument to be presented in the discussion.

4.1. Statistical Considerations

In this study, both descriptive and inferential statistics are applied in order to deliver a comprehensive understanding of the collected data. The first three aspects of the survey, users' awareness of location services function, popular connectivity types and types of value in exchange for location data are illustrated using tables to provide an overall understanding of the respondents' position on these topics amongst mobile users.

As for the user's awareness of the functionality of location services, we put forth the number of respondents who indicated if they use location services option in the settings of their smartphone against the question on whether they actually use location apps or not.

To represent the value that occurs more frequently the mode is most suitable choice. For descriptive data, the mode is the only measure of central tendency that a reasonable interpretation of which can be made (Saunders et al., 2009). The mode as the measure of central tendency is used to find the most occurring factor in connectivity types and types of exchange value. As these data are categorical and not numerical, we avoid the calculation of data dispersion (Saunders et al., 2009).

For the fourth aspect of the research, inferential statistics are applied to enable the author to make predictions based on the analysis of the data.

As for the fourth aspect, the hypothesis, the author will conduct a binary logistic regression. Binary logistic regression predicts the probability that an observed evaluation falls into the two categories of a dichotomous dependent variable based on one or more independent variables that can be categorical or numerical (Laerd Statistics, 2013). The suggested conceptual hypothesis is evaluated using the binary logistic regression as the dependent variable is defined as categorical (nominal) within the range of yes or no to the acceptance of location-based mobile marketing and the independent variable is defined as the median values of the Likert scale measuring respondents' view on incentives. These independent variables are known to be categorical (ordinal). The Likert scales consisted of 6 questions each, assessing the responses from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly

agree). As the nature of Likert items in the scale is a categorical (ordinal) type of data, the median of the data rather than the mean is used to merge the outcome of each scale. The response rate of the survey is 93.05 %. From a total of 72 potential respondents, a number of 67 respondents participated in the survey.

4.2. Descriptive Analysis

At this stage of the analysis, we will present the information gathered through the survey to indicate the popularity and use of connectivity types and forms of incentives in order to shape the guidelines based on this study for the application of location-based mobile marketing. To assess the aforementioned items, the mode, as a measure of central tendency is used to deliver the most frequent occurring values.

4.2.1. User’s Awareness

In order to assess the respondents’ awareness of the location services function and its obvious effect on functionality of location apps, the two questions with different focus were asked to measure this awareness. The respondents were asked firstly if they have location services turned on in the settings of their smartphone followed by whether they use location apps.

Here are the results for the two questions:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	49	73.1	73.1	73.1
	No	18	26.9	26.9	100.0
	Total	67	100.0	100.0	

Table 1. Using Location Services Function

As shown in the table, 73% of the respondents have answered with yes for the first question regarding settings on their smartphone and a rounded 27% with no, meaning they have turned off the location services in the settings.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	64	95.5	95.5	95.5
	No	3	4.5	4.5	100.0
	Total	67	100.0	100.0	

Table 2. Using Location Apps

In table 2, we can see that 95.5% of the respondents have replied with yes to whether or not they use location apps and a small number, only 4.5%, have answered that they do not in fact use any location apps.

4.2.2. Connectivity Types

In this section of the questionnaire, the respondents are asked to mark how often they use the connectivity types. The categories are: Wi-Fi, Bluetooth, Cellular Data and Near-field Communication (NFC). The options are coded as 1 (most of the time), 2 (sometimes), 3 (rarely) and 4 (almost never).

The findings can be summarized as the table below:

Statistics					
		Wi-Fi	Bluetooth	Cellular Data	Near-field Communication (NFC)
N	Valid	67	67	67	67
	Missing	0	0	0	0
	Mode	1.0	2.0 ^a	1.0	4.0

a. Multiple modes exist. The smallest value is shown

Table 3. Connectivity Types Ranked by Popularity

As we can see from the results, the mode for Wi-Fi and cellular data can be categorized as *most of the time*. In order to grasp a better understanding of the usage of these two connectivity types we can refer to their individual tables:

Wi-Fi					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most of the Time	57	85.1	85.1	85.1
	Sometimes	8	11.9	11.9	97.0
	Rarely	2	3.0	3.0	100.0
	Total	67	100.0	100.0	

Table 4. Wi-Fi Ranking

Cellular Data					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most of the Time	33	49.3	49.3	49.3
	Sometimes	24	35.8	35.8	85.1
	Rarely	6	9.0	9.0	94.0
	Almost Never	4	6.0	6.0	100.0
	Total	67	100.0	100.0	

Table 5. Cellular Data Ranking

By comparing the two, we can observe that even though the mode for both technologies represent the value of 1 (most of the time), the number of respondents who use Wi-Fi stands at 57 which is 24 users more than cellular data. This shows the more tendency of users towards Wi-Fi rather than cellular data.

The individual tables of Bluetooth and NFC are as follows:

Bluetooth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most of the Time	7	10.4	10.4	10.4
	Sometimes	23	34.3	34.3	44.8
	Rarely	23	34.3	34.3	79.1
	Almost Never	14	20.9	20.9	100.0
	Total	67	100.0	100.0	

Table 6. Bluetooth Ranking

Near-field Communication (NFC)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most of the Time	1	1.5	1.5	1.5
	Sometimes	5	7.5	7.5	9.0
	Rarely	18	26.9	26.9	35.8
	Almost Never	43	64.2	64.2	100.0
	Total	67	100.0	100.0	

Table 7. Near-field Communications Ranking

As shown in the tables above, the data for the usage of Bluetooth technology is representing two modes of values 2 (sometimes) and 3 (rarely). The use of NFC stands majorly at lowest frequency which is 4 (almost never).

4.2.3. Incentive Types

In this step, we will present the data collected for the popularity of four different incentives as encouraging elements for sharing of location data. The incentives are categorized as Store Credit, Loyalty Points, Cash Rewards and Coupons. The ranking evaluation is categorized as 1 (first), 2 (second), 3 (third) and 4 (last). To implement a sense of order respondents were informed that this grid is meant to rank from the most interesting incentive to the least interesting one.

The overall results can be shown in the following table:

Statistics

		Store Credit	Loyalty Points	Cash Rewards	Coupons
N	Valid	67	67	67	67
	Missing	0	0	0	0
Mode		2.0	4.0	1.0	4.0

Table 8. Incentive Types Ranked by Popularity

As seen in the table, cash rewards stand as the most popular form of incentive followed by store credit at the second place. We can see loyalty points and coupons both at the last rank so in order to clarify the detailed difference, the individual tables are as follows:

Store Credit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First	14	20.9	20.9	20.9
	Second	23	34.3	34.3	55.2
	Third	16	23.9	23.9	79.1
	Last	14	20.9	20.9	100.0
	Total	67	100.0	100.0	

Table 9. Store Credit Ranking

Loyalty Points

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First	7	10.4	10.4	10.4
	Second	11	16.4	16.4	26.9
	Third	24	35.8	35.8	62.7
	Last	25	37.3	37.3	100.0
	Total	67	100.0	100.0	

Table 10. Loyalty Points Ranking

Cash Rewards

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First	38	56.7	56.7	56.7
	Second	15	22.4	22.4	79.1
	Third	10	14.9	14.9	94.0
	Last	4	6.0	6.0	100.0
	Total	67	100.0	100.0	

Table 11. Cash Rewards Ranking

Coupons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First	8	11.9	11.9	11.9
	Second	18	26.9	26.9	38.8
	Third	17	25.4	25.4	64.2
	Last	24	35.8	35.8	100.0
	Total	67	100.0	100.0	

Table 12. Coupons Ranking

While loyalty points and coupons stand at the bottom of the interest, we can see that loyalty points have only one difference value between being the third interesting choice, standing at 24, and the fourth, standing at 25, which is presented as the mode for this category. The coupons however have a clearer tendency towards being the last choice of the respondents.

4.3. Inferential Analysis

As to try and prove the hypothesis, the author will undertake inferential statistics to test it in order to grasp a better understanding of the collected data and make predictions based on this analysis.

4.3.1. Cronbach's Alpha Test

To begin the processing of data for regression analysis, we have to first make sure that the data collected through the Likert scale is reliable. In order to do so, Cronbach's Alpha test is performed to find level of reliability for the data.

This is the initial alpha level for the incentives scale:

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.602	.596	6

Table 13. Reliability Statistics

The alpha value for the incentives scale is at the low end of the questionable level ($0.7 > \alpha > 0.6$). To improve the result we examine the initial total statistics table:

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q. 01	17.149	8.402	.505	.475
Q. 02	17.701	10.425	.196	.619
Q. 03	17.493	12.375	-.018	.680
Q. 04	16.642	8.809	.475	.493
Q. 05	16.373	8.540	.571	.451
Q. 06	16.060	10.724	.350	.558

Table 14. Item-Total Statistics- Initial – Incentives

As we can see from the table, removing question no. 03, will provide a large improvement for the scale. In order to better make the alpha closer to 0.7 value, the following improvement table is presented:

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q. 01	14.358	7.476	.555	.569
Q. 02	14.910	9.659	.198	.735
Q. 04	13.851	7.826	.534	.582
Q. 05	13.582	7.914	.564	.570
Q. 06	13.269	9.896	.370	.658

Table 15. Item-Total Statistics- Final – Incentives

By examining the table, we understand that removing question no. 02 will provide an alpha value of 0.735 which is perfectly in the range of the acceptance range ($0.8 > \alpha > 0.7$).

4.3.2. Kendall's Ranked Correlation Coefficient

Now that we have made sure that the scale data are reliable, we will continue to the next step by going through the binary logistic regression analysis. Before we run the regression we go over the results from the correlation analysis.

The Kendall's ranked correlation coefficient results can be seen here:

Correlations			accept value	incentives
Kendall's tau_b	accept value	Correlation Coefficient	1.000	.227*
		Sig. (2-tailed)		.037
		N	67	67
	incentives	Correlation Coefficient	.227*	1.000
		Sig. (2-tailed)	.037	
		N	67	67

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

Table 16. Kendall's Ranked Correlation Coefficient

The table for Kendall's ranked correlation coefficient shows that there is a weakly positive but significant correlation between the independent variable, incentives, and the dependent variable, accept value. The significance of this correlation stands at 0.037 (p-value<0.05) and its positive strength level at 0.227. From this analysis we can understand that by an increase in the incentives initiative, the attitude of the users tend to lean also onto the positive side which is sharing location data for incentives through mobile ads.

4.3.3. Binary Logistic Regression

While correlation is defined as when a change in one variable is accompanied by a change in another variable without knowing which one cause the change in other, a cause and effect relationship can be realized under the notion that a change in one or more independent variables causes a change in the dependent variable; this is what we come to know as coefficient of determination or regression coefficient (Saunders et al., 2009).

As the first step it is important to note that the output for a logistic regression comes in two blocks; block 0 and block 1. Block 0 gives the output where the model is decided without the predictor variable in effect. Block 1, on the other hand, includes the independent variable which is needed for the cause and effect analysis.

Since Block 0 output is not the goal of this regression analysis, we will only take the results for the classification table in Block 1 in order to compare the correct classification rate to that of the corresponding table in Block 0 to check for an increase.

At first we have a look at the omnibus tests of model coefficients:

		Chi-square	df	Sig.
Step 1	Step	4.487	1	.034
	Block	4.487	1	.034
	Model	4.487	1	.034

Table 17. Omnibus Tests of Model Coefficient

This table shows that the new model (Block 1) with the predictor variable (incentive) included, is in fact significantly a better model than the baseline model where incentive is not included. We are interested in the model row values as step and block values are only meaningful if our regression were a hierarchical logistic regression.

Next the figure for model summary:

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	87.182 ^a	.065	.087

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table 18. Model Summary

The model summary presents us with pseudo- R^2 values for the logistic regression. In standard regression, the coefficient of determination (R^2) is an indication of how much of the variation in the dependent variable is explained by the model. The pseudo values are instead used in the logistic regression as the conventional R^2 values cannot be calculated. From the values in the model summary we understand that 6.5 to 8.7 percent of the variation in the dependent variable can be explained by the model in block 1. Although these values are interpreted the same way as standard regression we refrain from emphasizing on the results.

The Hosmer and Lemeshow test presents the goodness of the fit:

Step	Chi-square	df	Sig.
1	2.242	4	.691

Table 19. Hosmer and Lemeshow Test

As the significance level shows, the model is a good fit for the data. We want this value to be more than 0.05.

Next up we compare the two classification tables from Block 0 and Block 1. This shows us how the model changed from the baseline by incorporating the predictor variable:

Classification Table^{ab}

Observed		Predicted		
		accept value		Percentage Correct
		No	Yes	
Step 0	accept value No	0	29	0.0
	Yes	0	38	100.0
Overall Percentage				56.7

a. Constant is included in the model.

b. The cut value is .500

Table 20. Classification Table – Block 0

As the table from Block 0 shows, the correct classification rate of the data is at 56.7%.

Here we see the classification table from Block 1:

Classification Table^a

Observed		Predicted		
		accept value		Percentage Correct
		No	Yes	
Step 1	accept value No	10	19	34.5
	Yes	5	33	86.8
Overall Percentage				64.2

a. The cut value is .500

Table 21. Classification Table – Block 1

The table in figure 27 shows that the correct classification rate in the model including the independent variable has increased to 64.2% and this means that the model has improved in comparison with the baseline model in Block 0.

Finally at the last step of logistic regression analysis, we go over the significance and strength of the predictor variable, incentives, with the dependent variable, accept value, in our model. Here is the table for variables in the equation:

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a incentives	.610	.303	4.053	1	.044	1.841	1.016	3.336
Constant	-2.049	1.180	3.014	1	.083	.129		

a. Variable(s) entered on step 1: incentives.

Table 22. Variables in the Equation

The table shows that incentives have a significant influence (p -value <0.05) on the acceptance of location-based mobile marketing. The important indicator of the effect of a change in incentives is exponential of B coefficient, Exp(B). As shown, the Exp(B) value for incentives is at 1.841. Any value above 1.0 is considered to have a positive effect on the dependent variable. This means that a one unit increase in incentives is followed by 1.8 unit increase in the acceptance of location-based mobile marketing which is towards the positive attitude of the users towards such service.

5. Discussion

In this chapter, we will go over the discussion in order to interpret the results regarding the research question based on the analysis of the data. The author will address the truth criteria and the limitations of the study as well.

5.1. Explaining the Findings

In this section we explain the findings of the research and its analysis as to try and find out what the survey has achieved in order to draw conclusions later. In order to present the information in a neat manner, we will follow the order of the four aspects of the research mentioned in the methodology; users' awareness, popularity of connectivity types, popularity of incentives types and the cause and effect analysis of incentives as predictor on acceptance of location-based mobile marketing.

As the results for the users' awareness suggest, there is somewhat an important misinformation amongst the users of this study about the function of location services settings and the fact that most of these users actually use location apps. While some apps might provide some sort of functionality when the location services settings is turned off on a smartphone, many others do not function at all. This shows that the majority of respondents are unaware of this fact and tend to be skeptic about the notion of sharing location data through location services in the settings of their smartphone but at the same time, use location apps on daily basis. The reason for this somewhat contradicting attitude towards functionality of location data can be rooted in privacy as a major concern for the users. As we know, the sharing of location by switching on the location services option is completely under control of the users and it is not something that can be forced upon them. One cannot claim that is unbeknownst to them either. These are indications that mobile users feel that whatever usage of their location data perceived as something that they need to be aware of and provide permission for, is conceived as a threat to their privacy if not lawfully permitted. If we were to provide a solution for such beliefs, it is most likely better to provide the users with an option to opt out of any marketing programs that advertisers want to offer. Also, a limited period of time can be convincing and less straight-forward as to give users a sense of control so that they feel safe and in command of the data leaving traces behind for marketers and advertisers to find. As we discussed in the case studies, mobile users are likely not to shy away from using a service that provides free Wi-Fi. Raising the interest of mobile users in such a way can be a cheap and cost-friendly way of letting the consumers know

that the value they are receiving can come in various forms and in a sequential format where they're rewarded almost every step of the way.

The matrix for the popularity of connectivity types is not only a good evaluation of the approach for the infrastructure of location-based marketing campaigns but also an indicator of how these platforms as infrastructure can be used as incentives themselves. This is also backed by the case studies included in this research where free Wi-Fi as an example, is used as an initial encouraging factor to draw foot traffic near the business hub and from there, offer the incentives that directly focus on the purchase intention of the customers. As we found out, Wi-Fi is the most popular form of connectivity amongst the respondents. This approves the idea that Wi-Fi can be a preliminary element in driving the message of location ads on mobile in order to increase foot traffic. As cellular data is seen as type of connectivity that is used while Wi-Fi access is not present, this is yet another reason for Wi-Fi to steal the show.

While Bluetooth and Near-field Communication (NFC) stand at third and fourth rankings of usability, one cannot deny that these technologies remain relevant. Bluetooth technology has been long used for file transfer and remains as the choice for the wireless speakers and headphones that take the hassle of wiring out of the picture. NFC technology stays at the bottom as we are yet to apply this form of connectivity in our daily lives. With the emergence of iPhone 8 and iPhone X, Apple Pay tends to play a more vital role in revolutionizing the digital payments through the use of Near-field Communication (NFC) and its more security via the integration Face ID technology (TechChurch, 2017). These are all signs that by undertaking a well-introduced approach, Bluetooth and NFC technologies can finally play a role as important as more popular technologies like Wi-Fi. Hopkins believes that the excitement about NFC has raised since mostly because Google has joined a cadre of wireless carriers, banks and credit card companies to lay out the structure for use of NFC for mobile payments in the United States (Hopkins & Turner, 2012, p. 45). He adds that with NFC we will soon see that although mobile users are scanning QR codes to connect to promotions and web pages using their mobile phones, as more and more people start adopting this technology, waving phones over NFC chip embedded posters, point-of-purchase materials and check-out payment processors can be seen a new way to transfer data from smartphones to electronic chip capable of near-field communication connection (Hopkins & Turner, 2012, p. 46)

The popularity of Wi-Fi can be regarded as the most convenient way of using the internet especially at someone else's cost at times. With cellular data, this is rarely the case unless the phone that is providing the internet is doing so through Wi-Fi by sending and receiving data via cellular data for internet access. These different forms of connectivity offer unique features in their practicality and that is why each if not all of them can be used in different settings tailored for the needs of marketers and advertisers just as much as the consumers themselves.

The incentives ranking matrix provided us with some information on what could be the demanded value for location data from the side of the users in this study. Cash rewards as the first choice of interest followed by store credit as the second, indicate that while other value exchange ideas such as loyalty points and coupons seem more realistic, it is almost impossible to neglect the concept of money as value. The underlying reason for this is probably that with money-based incentives, the marketers do not eliminate the element of choice in the eyes of the consumer. This element of choice is not meant as the type of incentive but the very incentive that offers no restriction on what the consumer should or could expect as an exchange for their location data. However, as we saw in the case studies mentioned, money-based incentives were not included in campaigns at all. The focus was on offers and coupons as reduction in prices acting as incentives and they were successful all the same. This could mean that money-based incentives can be run on one-time marketing campaigns that not only draw a lot of attention as being rare but also appeal to the sense of freedom of choice that tends to linger in consumers' mind from time to time. While case studies suggest a more practical approach which is cost-friendly as well, the survey here suggests a more exotic approach that is actually more popular backed by data. With money as an incentive, marketers and advertisers can reach out to many more users who are interested in receiving this kind of value because it is simply the commodity that speaks to everyone due to its flexibility of choice. While money as an incentive can be seen as not so cost-friendly from a business point of view, coupons can offer the same form of value only appearing in a different way. What this means is that offers that cut prices in order to attract potential customers are in fact saving the consumers money. However, with coupons and offers acting as money incentives, it is also important to note that these incentives are still bound by the nature of they are offering. A 20% discount on a cup of coffee for example could be appealing to many people but not so much as for people

who are not simply looking for a cup of coffee. This brings up the topic of reaching the consumers at the right time and the place as previously mentioned in the case studies. While certain offers particularly for food and beverages can be more plausible and efficient, the nature of the offer or the incentive as we'd call it, should be relevant and appealing to the audience the advertiser is trying to reach. Such implications in the practical case studies we have seen tend to use the need based on dimension of time and space as proper indicators of when and where to reach the potential customers. By neglecting these issues, valuable offers can be ignored from consumers simply because of the inconvenience of the process of reaching the businesses that are offering the incentives. Overall the driving of foot traffic to businesses using location-based mobile marketing ads should keep at practicing forms of strategies that target the users at the most opportune time to ensure the purchase intention of mobile users based on their location and the data that suggests at what time of the day these purchases mostly occur. This could be an indication of running various campaigns that do target users at different times in order to gather the necessary data on the best time windows that marketers and advertisers can reach for grabbing the attention of the consumers and generate high conversion rates.

And finally the testing of the hypothesis that incentives positively affect the attitude of users towards location-based mobile marketing. Before discussing the results of the Likert scale analysis for incentives, we review the Likert items so that the measurable factors are well explained.

By designing the incentives scale, many aspects of why and how the users could see and use location-based ads were measured. With regards to the questions that passed the Cronbach's Alpha test to increase the reliability of the scale data, we can see questions that evaluate the idea of incentives as a decisive factor for mobile users to feel less worried about sharing their location data and also to realize how these incentives are meant to be presented to the users so that the convenience factor would not fade away as a constant structure through which these encouraging elements are to be delivered.

As the incentives scale items show, they are designed to measure various aspects of incentives in a manner that individualism of the users, permission as a privacy control factor and convenience of use are all included. Such an approach enables the scale to

directly focus on incentives as a pleasant motivator and not a marketing and advertising tool of bombardment; a bombardment with ads.

Question one, asking about relevance of ads to customers' needs, concentrates on purposefulness of adverts so that the respondents can decide whether or not the receiving of relevant ads is a factor in being tolerant of ads that target them on daily basis. This is a vital step in the scale as it is a hidden driver in providing answer for the doubtful mind of users who tend to be pessimistic about the advertising business.

Question four, asking about how willing the users are to receive coupons that can be redeemed after a certain amount of time, is leaning on the idea of how little flexibility can be put in the deadline for using the coupons so that the lack of need from the consumers' side is met with patience and a choice based on time. When designing this particular item, the author tried to convey the idea of how digital coupons are not meant to be lost; not by means of losing them because of their physical state but also keeping them in a device that provides comfort of storage on a virtual platform.

Question five, asking about the time-efficiency of coupons and offers that reach the users first, is devised to grasp the idea of users about the factor of time as fleeting resource that can be optimized. As previously mentioned, the technologies that enable location ads deliverance based on premises over certain vicinities can reach mobile users with ads that inform them about the deals that are being offered around from the shops. These strategies can be integrated with traceable search patterns left by mobile users who have already agreed to the terms of service from advertisers so that targeted ads can become more appealing than before by factoring in the real-time delivery of offers and deals.

Question six, asking about receiving ads via one app rather than several apps from several brands, is meant to measure the desire of mobile users towards their idea of the channel to receive mobile ads and whether or not, based on findings of this study, the brands can in fact benefit from merging the channel for incentives ads so that a unified channel can bring comfort and ease of use based on the limited storage that mobile users might have.

As the cause and effect analysis showed, incentives as an encouraging factor can significantly affect the users' attitude towards location-based mobile marketing in a positive way. This is to show that the barrier between the users and marketers' access to location data majorly known as concerns of privacy can be overcome when a valid

form of value is offered to the consumers. While the idea of location-based mobile marketing is yet to be implemented in large-scale operations, the mobile users are already quite familiar with the idea of incentivized ads. They interact with them in gaming apps as an example where the user is encouraged to watch a video where they receive in-game currency as a reward. The challenge however, lies in normalizing the location sharing process where not only incentives are offered but the consumers are also met with convenience as a natural result of technological advances. The time of looking for things has long been replaced with things we are searching for to find us instead and this process needs to find its way through location-based advertising to convince the mobile users that efficiency and practicality can be an additional value for when their location data is treated as a commodity. The focus of mobile marketers and advertisers should be set on meeting the needs of consumers based on an appropriate approach at the right place and the right time. This way, the stigma with marketing and advertising can be newly defined as a force for the good of mobile users; never meaning to overwhelm and never meaning to divulge location information with unwanted parties.

5.2. Truth Criteria

In this part, we will go through the reliability, validity and generalizability of the study in order to prove that this research meets the truth criteria.

Saunders defines reliability as the extent to which data collection techniques and analysis procedures will yield consistent findings (Saunders et al., 2009). To measure the reliability of the data, the author has conducted a Cronbach's Alpha test to ensure that the collected data meets the acceptable alpha value of more than 0.7 so that the reliability of findings can be backed by proper analysis tools.

In order to ensure the validity of the findings, the questionnaire was designed in a way that the clear wording of the questions would increase the understanding of the respondents of the questions and the notion of location-based mobile marketing to improve the validity of the survey (Saunders et al., 2009). As an additional insurance, the questionnaire was initially run with a number of preliminary respondents to enhance the simplicity and focus of the questions. Saunders says that validity is also concerned with finding out that the results are really about what they appear to be about, he suggests a cause and effect analysis to realize the relationship between the two variables (Saunders et al., 2009). This is why the author has undertaken a regression analysis.

The binary logistic regression was chosen to fit perfectly with the conceptual framework and the nature of the survey.

While according to Saunders the research results of a case study at an organizations are safer not to be generalized to the whole population and should be limited to the framework of the particular bindings of the company or organization, he also suggests that the generalizability of a study which has been conducted based on sample survey, can be backed by the secondary data that has achieved the similar results (Saunders et al., 2009). In this case, the author has covered the role of incentives on users' positive attitude towards location-based mobile marketing in the secondary data provided by Bauer as literature review.

5.3. Limitations

As mentioned before, according to Bauer, there must be clear distinction between mobile users' attitude and their behavior. This means, that the behavior of the consumers while being assessed in a real-life condition while dealing with location-based advertising could in fact differ of their opinion or attitude towards LBA. Such distinction makes it clear that although studies like this are needed to evaluate the awareness and attitude, they do not however include the real-life aspect of the users' experience while interacting with location-based mobile marketing. In order to conduct a study within the dimensions of experimental research not only the researchers need the proper funding but also a randomized sampling which happens naturally within the setting of a hub of business as the physical vicinity for the research. It is only in these conditions where a cause and effect analysis can be performed with the option to completely remove or include a predictor variable in order to observe its effects on a dependent variable such as purchase intention of the consumers in a mobile environment.

Another limitation of this study could be defined as its generalization. However this is not because of the sample size or the sample choosing technique but rather the limited number of studies such as this thesis in academic and practical spectrum of location-based mobile marketing. Although a few publications have undertaken such research in this subject, the consensus approves of the generalization of the findings of this study as mentioned in the truth criteria nonetheless.

6. Conclusion and Recommendations

In conclusion and recommendation, the author draws conclusions from the discussion and makes recommendations based on these conclusions for the future studies with regards to the current research stage in location-based mobile marketing.

6.1. Conclusion

After discussing the research findings, it is worth drawing conclusion for implications of location-based mobile marketing in the near future.

As we have seen from the results and the explanation of findings, it is important to highlight the role of incentives in the constructive communication that marketers and advertisers try to establish with the mobile users. This means, not only incentives are the driver for the end goal of generation of revenue and foot traffic but also the decisive factor in convincing the consumers to share their location data willingly. Acquiring permission is a very vital step in which the users are conveyed a sense of control so that the freedom of choice as a fading idea in the consumers' perspective can be revived as a tool of power and control within the hands of the customer. It implies that without a credible form of service that promises both value and of recognition of concerns from users' side, it is quite the challenge to mine the data that are used in devising purposeful marketing strategies.

According to Business Insider, the business ambitions of Amazon are set to plummet the profitability of various retailers even more. Retail Giants like BestBuy, Macy's, Nordstrom and Sears are already making a lot more effort to counter the extensively growing dominance of Amazon in the industry (Taylor, 2017). The article goes on to state that internet retailers led by Amazon have increased their revenue in apparel by \$27.8 billion since 2005 as department stores have lost \$29.6 billion in the same course of time (Taylor, 2017).

As mobile devices become the hub of various activities across the digital spectrum, it is noteworthy to mention that a sound investment in mobile marketing based on location, can help the businesses reclaim the right to be convenient and time-efficient while offering incentives that draw attention from the busy minds of the modern consumer to what they have been missing all around based on the dimensions of time and space.

To reach a final conclusion and answer the research question based on the discussion in this work and the case studies it can be argued that by undertaking a solid location-based advertising strategy to run marketing campaigns, businesses can be thriving by

increasing awareness about the value that they can offer for the fair and secure use of consumers' location data and reap the benefits of mobile devices acting as the communication channel to deliver timely adverts containing incentives that meet the needs of mobile users relative to location with a message of convenience and mutual prosperity.

6.2. Recommendations

The recommendations that can be made based on this study for future research are mainly in line with the gap in research done in location-based mobile marketing. To be more precise, the need for more user-centric studies in the subject as the literature review suggests. However, if researchers can undertake a more practical approach and perform experimental studies that evaluate the behavior of the mobile users given the proper conditions, it can also help fill the gap in research for LBA in mobile marketing (Bauer & Strauss, 2016). By conducting an experimental research the dependent variable can be directly set as the revenue and thus provide a clearer image of the end result which can be measured on numeric basis to provide numbers in terms of income. A suggestion to be made for researchers who might be interested in doing research in the same manner as this thesis, assessing the attitude, can be made by including more predictors other than incentives. This approach allows for a more comprehensive framework where permission and privacy concerns are taken into account and their effects are included in the survey alongside the incentives. Even though in this study, incentives are meant as the main tool for marketers and advertisers to overcome the obstacle of concerns for violation of privacy, including privacy and other factors such as informative advertising, personalization, permission and irritability factors, the research can identify how several factors influence the acceptance of location-based mobile marketing.

Business psychology, economic sociology and marketing are the most relevant disciplines to bring the research in location-based advertising on mobile devices forward (Bauer & Strauss, 2016). More empirical research in LBA, the attribution of LBA with other aspects such as time namely an event, providing ads that act as recommender systems and finally in-car LBA as cars can be regarded as highly private assets such mobile phones can be recommended as guidelines for future studies (Bauer & Strauss, 2016).

As the idea of targeted advertising is directly associated with purchase behavior or rather identifying the needs of the consumers according to the patterns they leave behind, mobile ads based on location have more to do with psychological aspects of the consumers' mind than any other factor.

Since there are more than enough studies done regarding the technology of location-based mobile marketing, the same studies can help establish the framework for more studies in social experiments that cover the issues in location-based mobile marketing by producing reliable and measurable data that is derived exactly from the behavior of the mobile users rather than their opinion. If funding is provided such studies can raise the curiosity of marketers community as a whole and set practical examples of using location technology where results can be comprehended as a means for reliable strategies in advertising that are founded on real data.

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8. Appendices

8.1. Questionnaire

You are only asked to take part if you own a smartphone

Thank you for taking the time to participate in this survey. I am a student of Master of Business Administration at the Anhalt University of Applied Sciences and I am conducting a questionnaire survey regarding location-based mobile marketing. Location-based mobile marketing is defined as the ads delivered to you on your phone based on where you are. For example, a supermarket can send you an ad about the fresh vegetables that came in today; a clothes store can send an offer on your phone about the new sales deals when you are near their location.

It is worth mentioning that your participation will be completely anonymous. The survey will take approximately 10 minutes.

If you have any further questions, please do not hesitate to contact me via the following email: saeed.hajihosseinkhabaz@student.hs-anhalt.de.

***Required**

1. Do you have location services turned on in the settings of your smartphone? *

1. Yes
2. No

2. Do you use location apps such as Google Maps, Yelp, Runtastic, Foursquare, Waze and others on your smartphone? *

1. Yes
- 2, No

3. Could you mark how often you use these connectivity types? *

	Most of the times	Sometimes	Rarely	Almost never
Wi-Fi				
Bluetooth				
Cellular Data				
Near-field Communication (NFC)				

4. Please rank these offers as an exchange for your location data from the most interesting (first) to the least interesting (last). *

	First	Second	Third	Last
Store Credit				
Loyalty Points				
Cash Rewards				
Coupons				

5. Would you allow your location data to be shared if you were compensated with some form of value? *

1. Yes
2. No

What is your stance on the following statements?

1. “I like receiving mobile ads as long as they are relevant to my needs and preferences.” *

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

2. “I find mobile adverts annoying in general.” *

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

3. “It is easy for me to find deals during non-sale periods.” *

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

4. “I like receiving digital coupons that are still valid after a certain amount of time if I’m not using them right away.” *

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

5. “Being informed of deals and offers on my smartphone is more time-efficient than going around shopping mall to find them.” *

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

6. “I’d rather receive offers and coupons via one app rather than several apps from several brands.” *

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

I am...

Gender*

1. Male
2. Female

Age*

*Please choose.

Country of residence*

*Please choose.

9. Declaration of Authenticity

I hereby declare that I have prepared the dissertation submitted independently and no other means and sources apart from ones specified were applied. Furthermore I have not made payments to third parties for any part of the submitted dissertation. The paper has not been submitted in a different degree program at the same time nor in a similar form and has also not been published yet as a whole.

Berlin, 18.09.2017

Saeed Hajihosseinkhabaz