CONSUMERS' ATTITUDE TOWARDS MOBILE ADVERTISING

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Consumers' Attitude towards Mobile Advertising

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CERTIFICATE OF ORIGINALITY

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Wong Man Ting, Mandy

ABSTRACT

Mobile advertising has become popular in the world, especially in Asia due to its special features: ubiquity, personalization time-sensitivity and interactivity. Short Message System (SMS) has been generally used in mobile advertising. To investigate consumer behavior in mobile advertising, theory of reasoned action (TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen 1975) is employed in this study. TRA proposes that a person's behavior is guided by intention, which is a function of subjective norm and attitude, in which beliefs will form his or her attitude. Based on TRA model, the aim of this study is to investigate the behavioral intention to receive and read mobile advertisements, with attitude serving as the mediator. This study also examines the underlying factors which affect the attitude, including opt-in and opt-out permission, ubiquity and personalization.

Survey data was collected from 781 mobile phone users in Hong Kong. The data shows that mobile phone users hold unfavorable attitude towards and intention to SMS advertisements. Informativeness, entertainment, credibility, irritation, ubiquity and opt-out permission have significant effects on attitude and entertainment exhibits the strongest effect on attitude among the beliefs. Attitude is the major mediator between belief dimensions and behavioral intention.

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CHAPTER 1: INTRODUCTION

1.1. Background

Stepping in the age of mobile technology, a new marketing medium, mobile advertising has become popular around the globe. This new advertising media has been employed by many multinational companies like McDonald's, Google and Microsoft, etc. However, Consumers' attitude towards advertising in general is not identical in all countries. Although previous studies revealed that public attitude towards advertising in general is negative in western countries (e.g. Elliot and Speck, 1998; Zanot, 1984), it was found that Chinese consumers had more favorable attitude towards advertising (Chen, 1995; Pollay, et al., 1990; Zhou, et al., 2002). It is expected that China will be one of the highest potential markets for mobile advertising, but limited studies have investigated public attitude towards mobile advertising in mainland China and Taiwan (e.g. Tsang, et al., 2002, Xu, 2006). Chinese consumers' attitude towards receiving and reading mobile advertising as well as their intention to receive and read mobile advertisements would have changed when mobile advertising has been developed rapidly.

1.1.1. Trend of using mobile commerce and advertising

Short Message System (Service) (SMS) has become an emerging communication channel with the rapid growth of mobile phone ownership and usage in the 21st century. Research has shown that SMS marketing generated five times of response rate than that of direct mail (Forrester Reserch, 2002a). It is predicted that there will be 2.38 trillion text messages sent in 2010, which will generate revenue of over US$50 billion in the world (A.T. Kearny, 2005). In the United Kingdom, SMS has become another communication channel among young mobile users. Another research has revealed that 68% of the respondents used SMS services, and more than 90% of the users aged 18-24 subscribe to the services (Barwise and Strong, 2002).

SMS is generally used in mobile advertising, and Multimedia Message System (Service) (MMS) has just been used for advertising in Europe (Edwards, 2005), which is usually advertised on 3G platform. The mobile commerce (m-commence) had generated $4 billion in 2003 to $16 billion in 2005 from over 500 million users in the world (Carroll, et al., 2007). There is a trend for mobile operators to provide high-speed data transmission

services which would increase the access to the Internet and the m-commence. The m-commence in the Asia-Pacific region (excluding Japan) was expected to generate a US$12.4 billion market by 2005, compared with that of US$557 million in 2001 (HKTDC, 2006). It was expected that it would account for 10% of e-commence. A latest report from market analysis firm ABI Research forecasts that mobile commerce will account for $1.6 billion in revenues in 2009 (Ducan, 2009). It is forecasted that the mobile network revenue will reach over $100 billion in 2011 (Telecom Trends International, 2004). Mobile advertising, as a part of mobile commerce, is expected to generate $9.6 billion by 2010 (Wieland, 2006). The rising revenue of mobile commerce may be due to the proliferation of smartphones and consumers' increasing comfort with mobile transactions (Ducan, 2009).

According to GSM Association, it is expected that mobile network will cover 90% of the total world population by 2010 (cited in HKTDC, 2006). The mobile phone penetration rate in Western Europe is the highest (79%), which is followed by North America (48%) and Asia (12%). Mobile advertising has emerged as a new innovative way in promotion, which is

especially true in Asia and Europe (Edwards, 2005). Some multi-national firms such as McDonald's and Nike have employed mobile advertising as a part of their marketing strategies (Okazaki, 2005). Three selected cases can briefly explain the mobile advertising campaigns operated by different multi-national firms in Europe:

McDonald's

In 2001, McDonald's launched a large mobile marketing campaign with in-store flyers to encourage consumers to opt in tactical time-sensitive SMS promotion and entertainments like mobile competitions and interactive quizzes with prizes. The company received more than 220,000 responses by ten weeks and over 500,000 responses with a 30% response rate by the end of 2002 (Kavassalis et al., 2002).

Wella AG

In a promotion campaign of Wella AG of Dramstadt in Germany, SMSs were sent to 200,000 people asking them whether they want to send a mobile kiss to others. Those people who said "yes" would receive a call with a long kissing sound and a voice announcing "your first mobile kiss…

brought to you by Wella." The mobile phone users could forward the mobile kiss by entering someone's name and the mobile number and the people who sent the most kisses would get prizes. Wella received 750,000 contacts from the summer promotion (Borzo, 2002).

The United Kingdom Department of Health

In 2001, Department of Health in the United Kingdom launched a stop-smoking campaign in SMS format targeting young people. The SMS campaign was a part of Tobacco Education Campaign. It aimed at driving the target to watch Smokescreen short films. The Department promoted the SMS campaign in teen magazines and text messages to opt-in the database of the broadcast partner of Smokescreen films. Participants would be given a number of prizes, including an annual cinema pass. The Department could then raise the awareness and differentiate the perceptions of smoking of the young people through the campaign (Kavassalis et al., 2002).

1.1.2. Types of mobile advertising

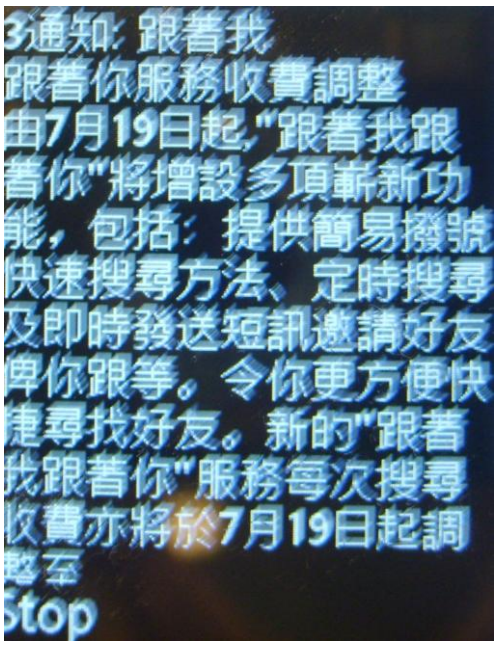
The current forms of mobile advertising in Hong Kong include SMS, MMS, banners and shortcut icons on the website.

SMS

Short Message System (Service) (SMS) works under the Global System for Mobile communications (GSM) digital standard. It refers to “the ability to send and receive short text messages from one mobile phone to another” (Kavassalis, et al.,2002:75). SMS advertisement is the simplest form of mobile advertising which only contains commercial text messages, but it is the most popular mobile advertising channel because the cost of sending SMS advertisement is the lowest among other choices of mobile advertising. Basically, all standards of mobile handsets can receive SMS advertisement under GSM and CDMA networks, which are commonly used in the world. In Hong Kong, SMS advertisements can be sent by the mobile network providers, authorized or unauthorized advertisers which contain different kinds of commercial messages, such as the latest discount of products or services, updated information of services and account information and location-based discount offer. Figure 1.1 to Figure 1.3 show the SMS commercial messages from mobile network provider:

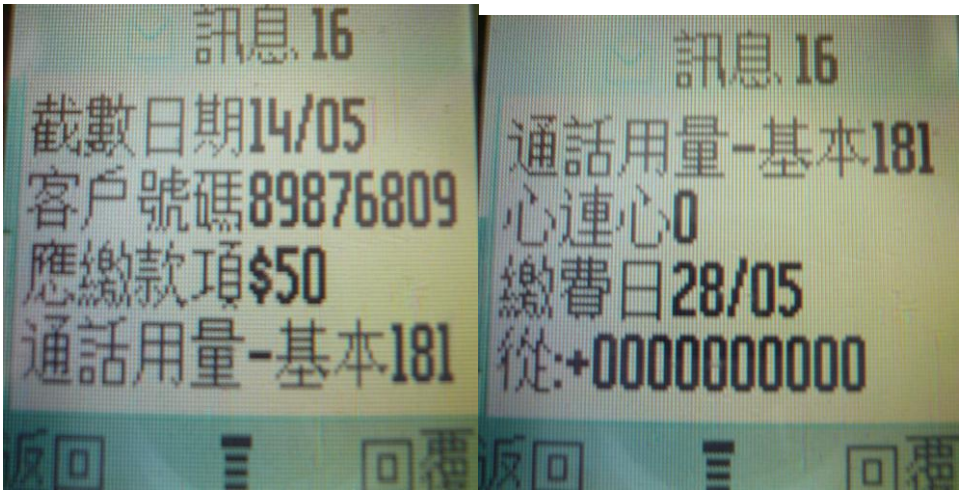
a. Promotion of latest product or service

Figure 1.1 Promotion of the latest service offered by '3'



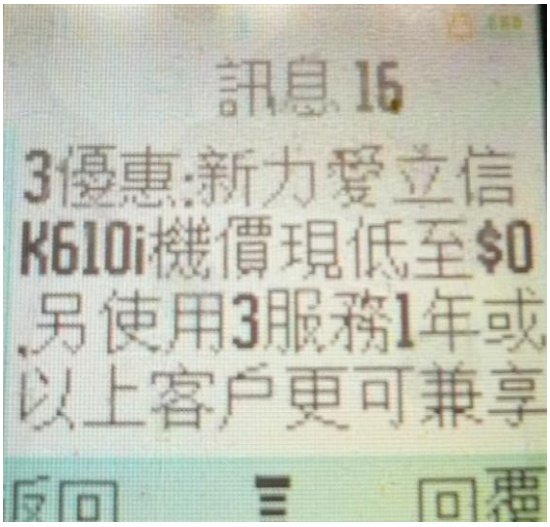
b. Account information (monthly bill)

Figure 1.2 Reminder to pay the monthly bill



c. Location-based discount offer

Figure 1.3 Location-based SMS offering discount of the latest model of mobile phone



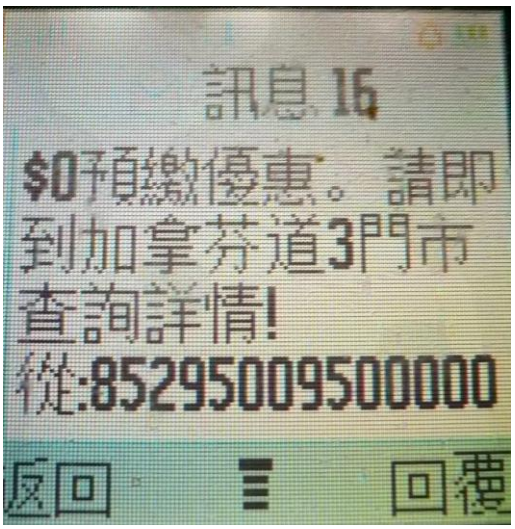


Figure 1.4a to Figure 1.8 show the SMS commercial messages from authorized or unauthorized advertisers:

a. Banking service

Figure 1.4a Credit card consumption promotion

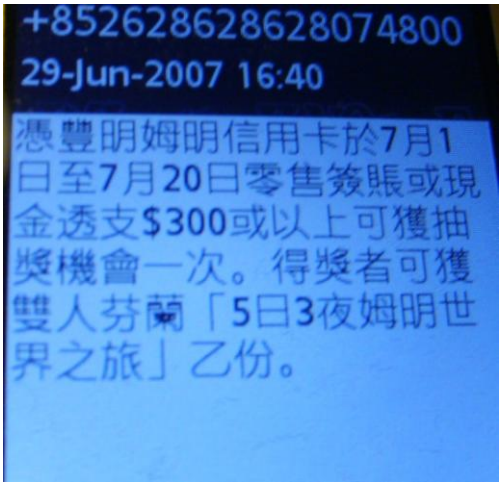
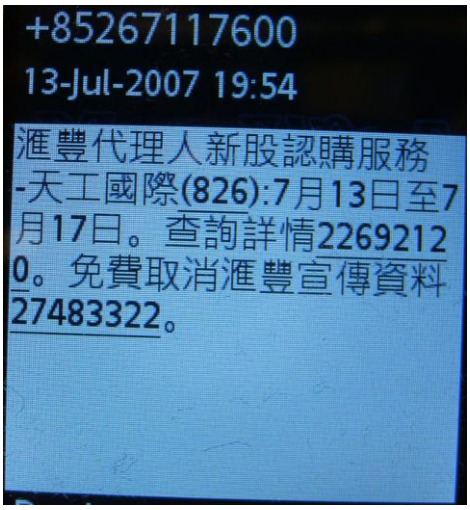


Figure1.4b Stock marketing with opt-out permission



b. Cosmetics

Figure1.5 Discount promotion from SaSa to its VIP customers

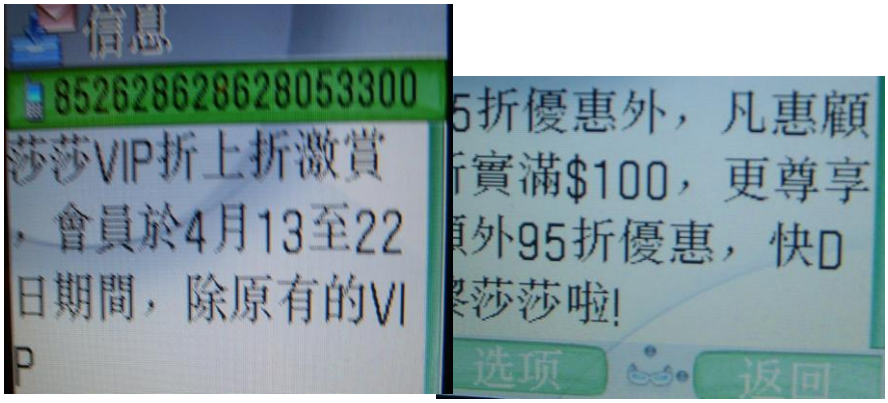
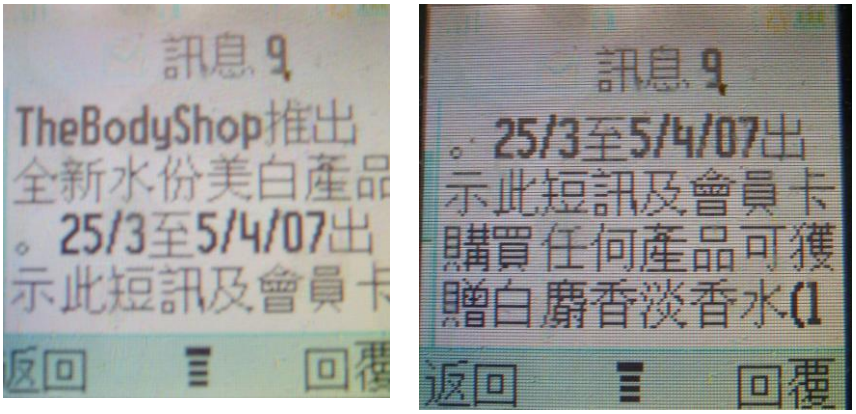
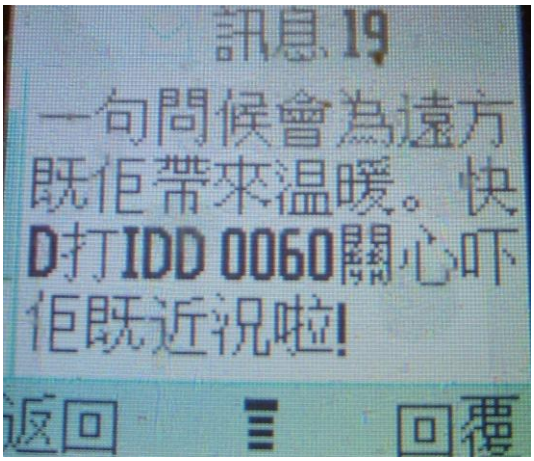


Figure 1.6 Promotion from The Body Shop to its members



c. Telecommunication

Figure 1.7 A telecommunication company reminds its customers to use IDD service



d. Other

Figure1.8 Promotion (lucky draw)

MMS

Compared with SMS, MMS (Multimedia System/Service) is "a new standard that makes it possible to send multimedia messages that combine text, sounds, images and video to MMS-capable handsets, and to receive them over the air" (Kavassalis, et al.,2002:75). As 3G platform has been developed in the Asia Pacific area, including Japan, Korea, Hong Kong, Taiwan and Singapore and 3G license has been issued by the government in mainland China by 2008, it is expected that MMS would become one of the important mobile advertising channels in future. MMS advertisement includes promotion of updated services or products, coupons and updated news.

Banner

On the mobile official websites offered by the mobile network service providers, banner is one of the most common types of mobile advertising on 3G platform. Banner is presented in two ways: text-based and graphic with text and hyperlink. Text-based banner can be in still or flashing forms with headlines on daily hot pick. Graphical banner includes 13 panels showing

pictures with headline and direct link to the latest content. Graphical buttons are also used.

Figure 1.9 Banner advertisement on 3G platform

Source: Hutchison Telecommunications (Hong Kong) Limited

Shortcut Icon

The shortcut icon is usually located at the first page of the mobile official website on 3G platform. Each icon represents a shortcut to a specific type of service or commercial message which enables users to find out and reach the service or commercial message which they preferred instantly. For example, if the user wants to download a ringtone from the mobile official website, he or she can find out the direct link to the “ringtone and picture download area” by clicking the shortcut icon shown on the front page. The user can find out and download the exact ringtone which he or she prefers by following simple instructions.

Figure 1.10 Shortcut icons on 3G platform

Source: Hutchison Telecommunications (Hong Kong) Limited

1.1.3. Mobile telecommunication industry in Hong Kong

The competition of telecommunication industry in Hong Kong is intense, with five licensed operators to serve a population of 6.8 million (OFTA, 2009). They provide both 2G and 3G services (1010 and One-2-free belong to the same financial group). According to the latest statistics from OFTA, there were 11,658,675 mobile subscribers with a penetration rate of 166.3%

and 3,744,690 subscribers used 2.5G and 3G services. As the competition is keen, the 3G network providers have offered different kinds of plans to attract consumers to subscribe 3G services with lower monthly fee. The table below shows the general basic 3G plans offered by four companies (updated till March 2007):

Table 1.1 The basic 3G plans offered by four main telecommunication companies in Hong Kong (2007)

Company/ plan	PCCW	3	SmarTone-Vodafone	1010
price	$138-$498	$88 -$538	$128-$598	$178- $348
Internet	Y	Y	Y	Y
Entertainment (songs, games, wallpaper, TV)	Y	Y (Sling, Yahoo go!)	Y	Y (TV)
Lottery	Y	Y	Y	Y
Banking	N	Y	N	N
Finance	Y	Y	Y	Y
e-commerce	N	Y (e-Bay auction)	N	Y (movie ticket buying)
Electronic Instant Communication	Y (MSN)	Y (MSN, Skype)	N	N
Shopping info	N	N	Y (updated discount info from Wellcome)	N

*Note: Y— Yes N—No

A Hong Kong based 3G pioneer, “3”, is keen on developing its 3G business around the world and it is the largest mobile service provider in Hong Kong. The company captured 23% of the local 2G market share and 65% of the 3G market share, according to the statistics from OFTA in October 2006. An interview with the senior management from “3” has provided us some insights on how mobile advertising is actually practiced under the context of 3G in Hong Kong.

Category of advertising format

The prevalent advertising format used by the company includes 1) SMS or advertisement; 2) Banner on the “3” mobile website; 3) Coupon offered; and 4) Shortcut icons on the content page of “3” mobile website.

Customer base

According to the statistics from OFTA by October 2006, there were about 1.2 million 3G users in Hong Kong. The management of “3” was optimistic about the growth of 3G since its launch and they expected that the number of total 3G users would increase to 2 million by 2007. The real growth has gone beyond their expectation. The recent statistics from OFTA showed that

among the 11.7 million mobile subscribers in Hong Kong, more than 3.7 million people used 2.5G and 3G services. Among the company's 3G customers, a majority of them are young people with an age range between 15 and 25 years old. Moreover, according to their customer survey, more than 70% of 2G customers had the intention to subscribe 3G services, mainly for the reason that they can make video calls by using the new services.

Create value by advertising in 3G services

The management believed that they could create more value for the customers by using 3G since the commercial messages could be delivered in the form of audio-visual with more entertainment elements (location-based games) and incentives (coupon). The table below compares the functions and costs of 2G and 3G services.

Table 1.2 Comparison of the functions between 2G and 3G networks

	2G	**3G**
Ad channel	SMS	MMS
Channel characteristics	Text only	Text & Audio-visual
Operation cost	Lower	Higher
Data involved	Lower	Higher
Subscription Cost for consumers	Higher (heavy data users) Lower (non data users)	Lower (heavy data users) Higher (non data users)
Opt-out regime of ad	Yes	Yes
Opt-in regime of ad	Yes	Yes
Popularity	Higher	Lower
Barrier	No graphic nor audio-visual element	Technology of handset, Limited MA agency in HK

Permission-based mobile advertising

As an advertiser, "3" promoted its services or its clients' product/service/function in two advertising formats, they were personalized-based advertising and location-based advertising, and both of them offered permission options for the customers. The company provided opt-in options at the beginning for customers to choose the categories of information they would prefer to receive from "3" and the company would

send commercial information to the customers according to the options they had indicated.

The company also sent advertisements to customers according to their usage of the mobile Internet. If the company detected that a consumer often read financial news from the web without prior indication in the options, the company would also deliver the MMS ads about the subscription of financial news to the user.

Figure 1.11 Main page of the mini website “Ocean Park Halloween Bush”

Source: Hutchison Telecommunications (Hong Kong) Limited

While the personalized based advertising was mainly performed on the basis of the options indicated and consumer behavior, location-sensitive advertising was mainly based on the interaction between the outdoor campaign and the customers in a specific place. A case study of Ocean Park's Halloween Campaign in 2006 can provide further details on its practical operation. The aim of the advertising campaign was to raise customers' awareness and arouse their interest in the Halloween Bash in Ocean Park. "3" set up a mini site with an icon in the "3" content page. The website offered wallpapers, ringtones and e-cards, customers were charged each time when they downloaded them. The main selling point of the mobile advertising is a tailor-made location-based interactive game. Virtual pictures of different ghosts were shown in a virtual map of Hong Kong. A ghost virtually appeared in Langham Place in the 3 Portal Grid and the players caught the specific ghost at the place that the ghost virtually appeared, like Lanham Place. In fact, the real version of that ghost appeared the Ocean Park's outdoor activity in Lanham Place. After catching a number of ghosts, the players would be awarded a free ticket for Halloween Bush. Moreover, chat-room was provided for social gathering and info exchange among the players for catching ghosts. The campaign resulted in

1,000 readerships of the advertisements, downloading ringtones and participated in the games, which was account for 12% of viewers visited the Halloween site.

Interactivity of the advertising

The company viewed interactivity in mobile advertising as one of the most important marketing strategies. It can be promoted by games like the "catching ghosts" activity of Ocean Park's Halloween Bash and other forms of activity. For instance, the advertising of "Artiste Award 2006" provided a mobile voting channel to users with related information to support the event. Voting charts were also shown at the website. The advertising had generated publicity, as a result in 30% of total votes were generated from the mobile portal, when compared with traditional voting methods, such as mailing and online websites.

Figure 1.12 Web pages of "Artiste Award 2006" on 3G platform

Source: Hutchison Telecommunications (Hong Kong) Limited

Main page of the website | Banner | Voting channel

Control of spam

To ensure the quality of the advertising, the company only cooperated with well-established advertisers, e.g. Adidas, Ocean Park, McDonald's, Disneyland, Johnson & Johnson's, Park'N Shop, Fortress, Starbucks. For MMS advertisements in the 3G platform, there was an "opt-out" option provided when customers signed the contracts. Customers could call the hotline or enter the "3Care" website to change or cancel the options. Moreover, the company required that no more than five advertisements sent to the same customer per day. However, they could not control those

advertisements sent from other unauthorized advertisers directly because "3" could not detect whether the mass messages sent by the advertisers were advertisements or common messages.

1.1.4. Permission-based policy in Hong Kong

Unsolicited electronic messages (UEMs) come from both Hong Kong and overseas. According to the industrial statistics, over 99% of spam emails come from overseas while the spam telephone calls, fax and mobile advertisements such as SMS and MMS advertisements mostly come from Hong Kong.

In 2004, a consultation paper on "Proposals to contain the problem of unsolicited electronic messages (UEMs)" was issued by the Office of the Telecommunication Authority (OFTA). It investigated different types of problems induced by UEMs, the effectiveness of existing anti-spam measures and opinions collected in dealing with the problems, including anti-spam regulation. In February 2005, cooperated with the industry and society, OFTA launched a campaign "STEPS" (Strengthening existing regulatory measures, Technical solutions, Education, Partnerships and

Statutory measures) to fight against UEMs. A call for a new anti-spam legislation was one of the measures suggested by the campaign.

In June 2005, the Legislative Council passed a motion to enhance the regulation of commercial marketing, including setting up a system to block promotion calls, defining the term "spam" and considering the telecommunication industry to provide consumers with service to filter the spam, such as promotion calls, SMS and MMS advertisements.

The Council developed detailed legislative proposals or the Unsolicited Electronic Messages Bill and launched a two-month public consultation on 20 January 2006.

The Bill was gazetted in July 2006 and introduced to the Legislative Council in the same month. During late July 2006, Bills Committee had been formed to study the details of the Bill. The Unsolicited Electronic Messages Ordinance (the Ordinance) was enacted by the Legislative Council in May 2007. Phrase 1 has been into force on 1 June 2007 and Phrase 2 has come into effect starting from 22 December 2007. The division

of phrases is to allow time for businesses to adapt to the new practices and change their information systems, as well as for the do-not-call registers to be established.

The ordinance aims at establishing a scheme for regulating the transmission of commercial UEMs which are originated from Hong Kong or overseas to Hong Kong electronic addresses. The ordinance also prohibits any fraud and other illicit activities related to the sending of multiple commercial electronic messages. In consideration of small and medium enterprises (SEMs) operation, an "opt-out" regime is proposed whereby senders can send electronic messages to recipients, but they must provide a functional unsubscribe option which allows the recipients to send a request to stop receiving further electronic messages at their electronic addresses. Rather than "opt-in" regime, it would provide more opportunities for SEMs and the start-up enterprises to promote their products or services at a lower cost.

To facilitate the "opt-out" regime, it is proposed to empower the Telecommunication Authority (TA) to set up 'do-not-call' registers to let registered users notify senders that they do not want to receive commercial

electronic messages. From the complete effective day of UEM ordinance (22 December 2007) till 29 January 2009, 393,907 mobile phone numbers had been registered in the 'do-not-call' system (HKSAR Government, 2009a). In addition, the maximum penalty is a fine of $100,000 proposed for the offences relating to address-harvesting on summary conviction (minor violation of law prosecutable without an indictment or full trial), and a fine of $1,000,0000 and imprisonment for five years on conviction in indictment (a formal written statement framed by a prosecuting authority and found by a jury charging a person with an offense). The penalty of fraud spam and related activities is a fine of any amount decided by the court and imprisonment for ten years. For the 'do-not-call' register on SMS or MMS advertisements, there were four violation cases and one warning letter had been issued. However, the ordinance had not been enforced (HKSAR Government, 2009a).

It seems that the practitioners are not resistant to the ordinance and they have adapted themselves into the new condition. According to the experiences of some interviewees, most of the SMS advertisements provided opt-out options. As the ordinance does not apply to the message

delivered in person-to-person calls, this type of call has become a tactic to the ordinance. From the complete effective day of UEM ordinance till 21 November 2008, the OFTA had received 61 complaints about the person-to-person calls (HKSAR Government, 2009b).

Unsolicited electronic commercial messages has been a serious problem concerned by the public and government, therefore the issue of opt-in and opt-out permission on receiving mobile advertising should be addressed. However, it seems that only the effect of opt-in permission has received some academic attention (e.g. Barwise and Strong, 2002; Drossos et. al., 2007, Muk, 2007; Tsang, et. al., 2002), while the effect opt-out regime on consumers' attitudes is ignored by researchers.

1.1.5 Special features of mobile advertising

Personalization is one of the special features of mobile advertising, which offers new chances for the marketers to place effective and efficient promotions to mobile phone users (Kalakota and Robinson, 2001). The users perceived mobile advertising as a type of personalized advertising which is relevant to their lifestyle, indicated by Reza, Chady, the head of

global market research at Nokia Networks (DeZoya, 2002). In fact, the concept of personalization has been widely used in customer service sector, but its effect on consumer behavior receives little concern in the field of mobile advertising. A study conducted in mainland China found that it was one of the most important factors affecting the attitude towards mobile advertising (Xu, 2006).

Another special feature of mobile advertising, ubiquity has been used to explain the application of mobile commerce or mobile marketing (e.g. Kurkovsky and Harihar, 2006; Islam and Fayad, 2003) but no attempt has been made to link this essential characteristic to the understanding of consumer behavior. Therefore, academic concern should be addressed on the effect of this mobile advertising characteristic on consumer behavior.

1.2. Research Objectives

The objective of the study is to build a theoretical framework to explain the impact of a bundle of determinants on mobile phone users' attitude on and intentions to receive and read mobile advertising. Theory of reasoned action (TRA) was employed to examine how the beliefs held by the users

influence their attitude and how the attitude and the concept of subjective norm affect their behavioral intention to receive and read mobile advertising. Attitude theories have been applied to explain human behavior. TRA has been widely used to explain and predict consumer behavior. It assumes that human beings behavior actions rationally and make use of different information which is available to make a decision to act (Fishbein and Ajzen, 1980). The attitude towards a behavior and subjective norm (social pressure to perform the behavior in question to which the person is subject) are the two main factors which determine the person's intention to act, and the attitude towards a behavior is a function of the beliefs held by the person. Hence, TRA was used to explain and predict the attitude towards receiving and reading mobile advertising and intention to receive and read mobile advertising in this study.

More specifically, the study will address the following research questions:

1. Which belief dimension has the strongest effect on the behavioral attitude towards and intention to receive and read mobile advertising in theory of reasoned action model?

2. What are the effects of personalization, ubiquity and permission (opt-in and opt-out), which are special characteristics of mobile advertising, on the attitude towards receiving and reading mobile advertising?

3. How do mobile phone users evaluate mobile advertising?

4. What are the attitude and intention of mobile phone users towards receiving and reading mobile advertising?

5. Do mobile phone users with different demographic characteristics differ in the beliefs, attitude, subjective norm and intention to receive and read mobile advertisements?

6. What are the reasons of not reading mobile advertisements?

1.3. Significance of the Study

Theoretical contribution

The theoretical contribution of this study is to extend the TRA model by identifying factors which influence the two main constructs of the TRA model: attitude towards receiving and reading advertising and subjective norm. It is proposed that consumers' perceptions of mobile advertising, including ubiquity, personalization, opt-in permission and opt-out permission are the antecedents to the constructs of the TRA model.

Practical and managerial contributions

This study will help marketers understand the factors affecting consumers' attitude on and intention to receive and read mobile advertising so as to design an appropriate advertising strategy to promote their products and services. The results of this study will also be valuable for the government in developing policy about unsolicited electronic message to improve the business environment for the advertisers.

1.4. Organization of the dissertation

This dissertation is composed of six chapters. Chapter one provides an introduction and overview of the mobile advertising and the related policy

in Hong Kong and other countries, and explains why it is essential to conduct a study with a proposed model to understand the attitude and behavioral intention of consumers in relation to receiving and reading mobile advertisements. Chapter two reviews the literature on advertising including the impact of attitude towards advertising, traditional advertising, Internet advertising and mobile advertising. Chapter three presents the development of the conceptual model and the hypotheses. Chapter four describes the research methodology, including research design, instrument development, sampling plan, procedure and data analysis methods. Chapter five reports the findings of this research and the tests of the hypotheses. Chapter six provides a discussion and conclusion, together with the theoretical, managerial, consumer and policy implications of the results and some suggestions. The limitations of this study and recommendations for future research are also included in the last chapter.

CHAPTER 2: LITERATURE REVIEW

This chapter consists of a review of the literature of the conceptualization on the attitude towards advertising. The impacts of attitude towards advertising are reviewed first, followed by studies about attitude towards traditional advertising and Internet advertising. The last section is the review of studies about mobile advertising, including the definition and characteristics of mobile advertising and the attitude towards this type of advertising.

2.1. Impacts of attitude towards advertising

The underlying assumption of the theory of reasoned action (TRA) is that human behavior is rational and systematic or primarily under the control of unconscious motives. "A person's purchase or use of a product is determined by her intention to purchase or use it, and the choice among different brands is a function of the relative strength of her intention with respect to each brand. Her intention to buy or use a given product is in turn determined by her attitude toward buying or using it…" (Ajzen and Fishbein, 1980:159). Attitude has been found to be a good predictor of consumer behavior (e.g. Mitchell and Olson, 1981; Shimp, 1981; Shimp and Kavas,

1984). According to the perspective, Bagozzi (1981) found that attitude influenced behavior only through its effect on intention. The effect of attitude towards advertising on the attitude towards specific advertisement (Lutz, 1985), brand attitude and purchase intention (e.g. MacKenzie, et al., 1986; Mitchell and Olson, 1981; Shimp, 1981) has long been investigated. The relationship between the attitude towards specific advertisement and general attitude towards advertising has been also observed (Lutz, 1985). Researchers have also been interested in the structure of advertising attitude, but their studies have tended to used smaller and less representative samples which may not be generalizable to the public in the United States (e.g. Muehling, 1987; Polly and Mittal, 1993). Another focus has been an attempt to understand the effect of general attitude towards advertising on involvement in specific advertisements (James and Kover, 1992), advertisement recall (Donthu, et al.,1993; Metha, 2000), brand switching and behavioral loyalty (Deighton, et al., 1984), buying interest (Metha, 2000) as well as consumer purchase behavior (Bush, et al., 1999). However, the effect of attitude towards advertising in general on purchase intention has not received specific academic attention.

The TRA suggests that the attitude towards an act will influence an individual's behavioral intention and action. Applying TRA model, this study suggests that consumers' attitude towards reading and receiving mobile advertising (attitude towards an act) will influence intention to read and receive mobile advertising (behavioral intention). A review of overall attitude towards different kinds of advertising (traditional advertising and Internet advertising) is needed in order to understand the attitude towards mobile advertising and its effect.

2.2. Consumers' Attitude towards Traditional Advertising

2.2.1. Attitude towards advertising in general

Defined by MacKenzie and Lutz (1989), attitude towards advertising is "a learnt predisposition to respond in a consistently favorable or unfavorable manner toward advertising in general". It was found that the general attitude towards advertising had changed through time, mainly from positive to negative (Anderson, et al., 1978; Elliot and Speck, 1998; Zanot, 1984). The earlier researches since 1939 only focused on the general likeability towards advertising. From 1939 to 1950s, the public generally held favorable

attitude towards advertising. During the Second World War, it was found that majority of the public (75% of the respondents) supported for advertising as a "necessary part of the economy" (The Association of National Advertisers, 1942; as cited in Bauer and Greyser, 1968). A survey conducted by Gallup Organization Inc. reported in Redbook Magazine in 1959 showed that 75% of more than 1600 respondents liked advertising mainly because it was informative (cited in Bauer and Greyser, 1968).

Although advertising has been presented for more than a century (Aaker, 1991; Bauer and Greyser, 1968), no research had been carried out to examine attitude toward advertising systematically until 1960s. The previous studies were only limited to test the general favorability towards advertising but the later studies considered belief as an association to the attitude towards advertising in a systemic way. Bauer and Greyser (1968) started to investigate the attitude towards advertising, in terms of the beliefs towards economic and social effects brought by advertising. They reported that although respondents hold a positive view on its economic effect (e.g. "raise the living standard", "lower/raise product prices") , they had

unfavorable attitudes towards its social effect (e.g. “persuade you to buy what you don’t need”, “insult the intelligence of an average customer”).

Also, the general attitude towards advertising began to change in 1960s. Bauer and Greyser (1968) reported that people generally (41% of the respondents) had positive attitude toward advertising in 1964, but the general likeability seemed to decline when compared with the survey results with more than 70% of the respondents showed their favorability towards advertising during the past decades.

The attitude towards advertising has become more negative since 1970s (Zanot, 1984). Zanot (1984) reviewed the survey results from 1930s to 1970s and concluded that the public’s attitude towards advertising became unfavorable gradually: “In almost every instance where a study was replicated, the later one shows more negative attitudes” (p.146). Advertising was considered as misleading by most of the respondents (Schlosser, et al. , 1999). Most of the respondents felt that their intelligence was insulted by the advertising and less than a quarter of TV advertisements were trustworthy (Mittal, 1994). Although some consumers thought that

advertising was informative and entertaining, other people did not favor the advertising clutter and held skeptic attitude towards the advertising (Pollay and Mittal, 1993). Elliot and Speck (1998) found that the highest level of ad-related communication problems such as hindered search and disruption, which were related to more negative attitude and ad avoidance, were shown in TV and magazines.

There is an exceptional result of the research conducted by Shavitt, et al. (1998). They reported that general attitude toward advertising was favorable, especially in the age group of 18 to 34. Although many past studies revealed that the general attitude towards advertising was negative, it was also found that advertising was enjoyable. Almost half of the respondents thought that TV advertisements were sometimes more entertaining than TV programs (Mittal, 1994).

Moreover, the general attitude towards advertising seems to be different in Asian region. Pollay et al. (1990) found that the mainland Chinese respondents had positive attitude towards advertising in general but negative attitude towards Chinese advertisements. Explained by the authors, the

general attitude towards advertising was positive may be due to the special social situation in mainland China at that time: “Advertising, a symbol of capitalism, may be perceived favorably because of a naive enthusiasm promoted more by the latest state propaganda, rather than by extensive experience and reflection. (p.92)” Also, the respondents only agreed that Chinese advertisements were informative and easy to understand. Moreover, they wanted the advertisements to be more entertaining and attractive. However, they also agreed that there were too many advertising, especially on TV, radio and print media. Nevertheless, the survey was only limited to 123 respondents in three Chinese cities in total and more than half of the respondents were more educated (58% had postsecondary education) and around two per cent of them held more professional occupations than the general public. A study revealed that both Chinese and Taiwanese respondents had positive attitude towards advertising and the Chinese respondents tended to have more favorable attitude. However, the sample was only limited to college students (Chen, 1995). Recent research found that nearly half of the 825 urban Chinese respondents held positive attitudes towards advertising and only twenty per cent of them disagreed with it (Zhou, et al., 2002). Another recent comparative study showed that Chinese

respondents held the most positive attitude towards advertising in general, while the American respondents had the least favorable attitude. In addition, the Chinese respondents held the most favorable attitude towards the social effect of advertising, while the American respondents held the most negative one (Ferle and Lee, 2002).

2.2.2. Belief and the attitude towards advertising in general

The relationship between belief and attitude

An attitude can be described as "an index of the degree to which a person likes or dislikes an object" (Ajzen and Fishbein, 1980:64) and "general and enduring positive and negative feeling about some person, object, or issue" (Petty and Cacioppo, 1981:7). It can be viewed as people's evaluations of their perception of something. Unlike the traditional research only studying the likeability of advertising in decades ago, belief about certain aspects of advertising has attracted the attention from researchers since late 1960s. "A person's attitude is a function of his salient beliefs at a given point in time" (Fishbein and Ajzen, 1975: 222). Belief is considered as an important factor in the formation of attitude. As noted by Petty and Cacioppo (1981), belief

is “information that a person has about other people, objects, and issues” and the information “may have positive, negative, or no evaluative implications for the target of the information” (p.7). Hence, belief can be seen as what people perceived and this perception will form an attitude.

Categorization of beliefs in the field of advertising

Different from the past studies about the likeability of advertising, Baurer and Greyser (1968) studied the general attitude towards advertising in a systematically by categorizing beliefs of advertising in economic and social impact. Economic role was defined by several items like “raises standard of living” ,“results in better products” and the social role was defined in the term like “persuades you to buy what you don’t need” and “insults the intelligence of an average consumer”.

A later study conducted by Greyser and Reece (1971) found that people held more positive attitude towards the advertising’s economic effect than its social effect. They also categorized beliefs in other aspects, such as the information provided by the advertisements, irritation generated by the advertisements, invalid or misleading claims made by the advertisements,

etc. They also divided the insulation of intelligence into two levels, i.e. whether the advertisements insults the public's intelligence and the respondent's own intelligence. Greyser and Reece's (1971) categorization of beliefs was adopted by Haller (1974), in which the respondents were college students instead of businessmen. Compared with businessmen, the student respondents tended to believe that advertising was irritating, misleading, unnecessary and insulting their own intelligence.

Similar to the research of Greyser and Reece (1971), Reid and Soley (1972) focused on the beliefs of advertising in terms of the effect in the generalized and personalized aspects. They studied how the advertising influenced the behavior of other people (generalized belief) and a person's behavior (personalized belief). The study suggested that people tended to feel that other people were more susceptible to social effects of advertising than themselves. Also, people tended to have more negative personalized attitudes than generalized one toward the social and economic effects.

Another empirical research revealed that five beliefs significantly influenced the attitude towards advertising in general, which accounts for

more than 57% of the variance in explaining the overall attitude. The five beliefs were listed as “whether or not advertising insults the intelligence of consumers”, “presents a true picture of product advertised”, “should have legal limits placed on its (advertising) expenditures”, “creates desires for unnecessary goods”, and “has a higher standard than ads appearing ten years ago” (Muehling, 1987).

Based on the studies of Bauer and Greyer (1968), Pollay and Mittal (1993) proposed that the beliefs contributing to the attitude towards advertising can be explained in two levels, micro (personal) and macro (societal) factors. Personal factors included the attributes of production information, hedonic pleasure and perceived social role and image of advertising. Societal factors included merits to the economy, falsity of the advertisement, corrupt value and materialism induced by advertising. It was found that different factors affecting the attitude of different groups in the sample. Good for economy belief was an important factor influencing students’ overall attitude while falsity or no sense was for household. The means of cultural sins (materialism, corrupt value and falsity/no sense) scored above the mid-point of scale which implied that there was a continuous negative attitude toward

advertising.

Apart from the economic and social role of advertising, it was found that the informativeness and credibility, enjoyment or annoyance and silliness (e.g. insulation of average consumers' intelligence) were used to measure the public perception of the uses and consequences of TV advertising, which accounted for 44.4% of the total explained variance. The results indicated that information contributed to the most of the attitude towards advertising, while silliness was the least (Mittal, 1994). Ducoffe (1995) also adopted similar beliefs to measure advertising value, "a representation of the perceived value of advertising to consumers", namely informativeness, deceptiveness, entertainment and irritation. It was found that informativeness, irritation and entertainment were the most important factors contributing to the advertising value. Among these factors, entertainment plays the greatest role in accounting for the overall attitude towards advertising (Shavitt, et al., 1998).

2.2.3. Other factors affecting attitudes towards traditional advertising

Attitudes towards advertising in particular media vehicle

Some studies focused on the attitude towards advertising in a particular media vehicle. Many traditional studies focused on TV advertisement and it was found that the general attitude towards television advertising were unfavorable. Bauer and Greyser (1968) reported that TV advertisements were more annoying than the advertisements in other media. Elliot and Speck (1988) conducted an attitudinal survey among six media: television, radio, magazine, newspaper, Yellow Page and direct mail. It was found that television exhibited the highest level of ad-related communication problems such as hindered search and disruption, which would lead to avoidance to advertising. Similar to the findings, advertisements in television and direct mail advertisements were considered as the most annoying advertising by the American students (Hall, 1974). Mittal (1994) found that almost half of the respondents disliked TV advertising and only one-forth of them preferred it. Exceptional survey results revealed that attitudes towards TV advertising would be more favorable (Shavitt., et al., 1999).

Apart from the traditional studies about TV advertising, advertising in other media channels were also studied. Other than television advertising, Elliot and Speck (1988) found that magazine also exhibited the highest level

ad-related communication problem which would induce ad avoidance. A research adopted general advertising attitudinal scale to test the attitude towards direct mail advertising (DMA). The adaptability of the scale revealed similar beliefs towards advertising in general and DMA (Korgaonkar et al, 1997). It was found that although the respondents held unfavorable beliefs towards some aspects of DMA, the overall attitude towards DMA was positive in general (Korgaonkar et al, 1997). Recent research compared consumers' attitude towards postal direct mail marketing and unsolicited commercial email and the results showed that while both advertising media vehicles were instructive and irritating, unsolicited e-mail advertising was perceived as more instructive and irritating than postal direct mail advertising (Morimoto and Chang, 2006). However, the sample was limited to 119 college students with mean age of 20.1. Moreover, the sample was divided into two groups of surveys: direct mail (n=62) and spam (n=57). It seems that the sample size was too small for both survey and the results may be thus affected.

Some researchers found that the relationship between attitudes towards advertising in general and recall of outdoor (billboard) advertisement

context were positively related. Apart from the overall attitude towards advertising, others factors also affected the recall of the advertisement, such as the advertisement location (outdoor advertisements were recalled more than that on the street), simplicity of the advertisement content (the advertisement with less than or equal to seven words were recalled more than that with eight or more words) and attention to the billboards (the advertisements with higher attention from the respondents were recalled more than that with lower attention), etc (Donthu et al, 1993). From the view point of businessmen, those companies using billboard agreed that it was a cost-effective way to attract customers' attention and increase the sales, especially for those small businesses and heavy users of billboards. It is interesting to find that the non-users (the businessmen who did not used billboards) hold opposite opinions. They believed that the Internet and local television were the most useful media vehicles to attract new customers and increase sales (Taylor and Franke, 2003).

Attitude towards the ad (A_{ad})

Mackenzie and Lutz (1989) proposed that general attitude towards advertising was one of the factors contributing to attitude towards

advertisement (attitude towards the ad –A_{ad}). However, other researchers found that A_{ad} was a crucial factor affecting the attitude towards advertising in general (AG) (Lutz, 1985; Shimp, 1981) and the purchase intention (Lutz, 1985). Defined by Lutz (1985), A_{ad} is "a learned predisposition to respond in a consistently favorable or unfavorable manner to advertising in general" (p.53). Therefore, attitude towards specific advertisements can be considered as one of the antecedents affecting the attitude towards advertising.

Brand attitude and brand familiarity

Previous literature reveals that attitude towards specific advertisement (A_{ad}) is an important antecedent of brand attitude (A_b) (e.g. Mackenzie et al., 1986; Shimp, 1981) and the attitude towards advertising in general (AG) is one of the essential factors affecting A_{ad} (Mackenzie and Lutz, 1989). Regardless the influence of involvement, brand attitude is significantly influenced by A_{ad} and therefore A_b would influence the purchase intention (Miniard et al., 1989). Shimp (1981) found that A_{ad} affected attitude towards the brand and therefore consumers' brand choice.

On the other hand, the reciprocal mediation hypothesis (RMH) can explain the casual relationship between A_{ad} and A_b. (Heider, 1946, as cited in MacKenzie et al.,1986). The theory postulates that people tend to maintain "balanced" cognitive relationships, i.e. the reciprocal relationship between A_{ad} and A_b. The direction of the casual relationship depends on the maturity of the brand. If the brand is mature, consumers would have prior experience and attitudes towards the brand which may exert an impact on consumers' reaction to the advertising. Therefore, A_b would have a dominant effect over A_{ad} in the casual relationship (MacKenzie et al.,1986).

Most of the previous literature only focused on the relationship between A_b and A_{ad} (e.g. Mackenzie et al., 1986; Miniard et al., 1990; Shimp, 1981) instead of AG and intention. It seems that no research focuses on the relationship between brand familiarity, attitude towards advertising in general and the intention. Studies in retailing operation showed that consumers required considerable cues when making purchase decisions. One of the important cues was the retailer or product brand name (e.g. Chu, et al., 2005; Dhruv, et al., 1998). Aaker (1991) indicated that brand equity

would affect the information process and thus create positive feeling and attitude towards the brand and intention to purchase.

Receivers' characteristics

Gender

Although most of the students felt that more than half of the advertising was irritating and insulting their intelligence, majority of the male students agreed that less than half of the advertising was in bad taste while most of the female students held an opposite view, that is, majority of them felt that more than half of the advertising was in bad taste (Haller, 1974). It shows that gender would be one of important factors affecting certain beliefs and attitude towards advertising.

Age

Majority (78%) of the respondents under Greyer and Reece's survey in 1971 aged between 30 and 59 while the mean age of the Haller's (1974) student sample was 23.7. While the respondents in Greyer and Reece's survey (1971) generally hold positive attitude towards advertising in general, the

student respondents in Haller (1974)'s had opposite attitude towards advertising.

Education and income level

It was also found that people who have higher education tended to have more unfavorable attitude toward advertising (Anderson, et al., 1978). In addition, three demographic segments of young male, people with lower education levels and income and nonwhites had more favorable attitudes towards advertising (Shavitt, et al., 1998). A survey revealed that a group of consumers, so called "Power Consumers", with an average monthly income just above HK$20,000, tended to be more resistance to TV advertisements and thought that the advertised products might not be trustful (Savage, 2005). Unlike the American consumers, Chinese consumers with higher education levels tended to have more positive attitudes and beliefs towards advertising (Zhou, et al., 2004). However, Elliot and Speck (1998) found that demographic factors (income, gender, age and media usage) had limited effect on perceived clutter, which would influence attitudes negatively.

Social status

Businessmen

Questionnaires were completed by over 2,400 businessmen and it was found that advertising was essential to business in general because it could stimulate consumption of advertised products, for example, advertising would attract more attention from the public, generated higher prices of the advertised products and often persuaded the public to buy the things that they did not need. Also, the businessmen strongly agreed that advertising facilitated higher standard of living (Greyser and Reece, 1962).

However, after 10 years, a similar survey was conducted by Greyer and Reece (1971) among 2,700 businessmen showed that they had more critical views towards advertising. Although almost all of them believed that advertising was important to their business and it made people have more confident in advertised products, more than half of them agreed that advertising influenced children negatively. Moreover, nearly half of the executives (46%) agreed that advertisements themselves were in bad taste and more than half (52%) of them believed that advertisements insulted the public's intelligence, while only 39% of the businessmen agreed that advertisements were in bad taste and less than half (46%) of advertisements

insulted intelligence. However, same as the results of the study in 1962, majority of the executives (52% in 1962's study and 54% in 1971's study) agreed that advertisements were irritating.

Student

Compared with the study of businessmen's attitude towards advertising conducted by Greyser and Reece (1971), it was found that university students had stronger negative attitude towards advertising than businessman. Compared with the businessmen, university students held more critical attitude towards advertising. Haller (1974) adopted many statements in the study of Greyser and Reece (1971) and found that collegiate had more significant negative views than the businessmen's views in Greyser and Reece's (1971) study. Nearly half of the students (45%) disagreed that "advertising is a good information source" and majority of them (80%) of them agreed that advertising persuaded people to purchase the goods that they did not need. It was also found that nearly 80% of the respondents thought that the advertisements insulted their intelligence and nearly two-third of them felt that more than half of the advertising was irritating. It seems that there is no significant difference of the views in

terms of different groupings, like geographical area and the year-in-university category. Price and quality were the most important factor affecting students' purchase decision. Surprisingly, brand and style were the last factors in their purchase consideration. Nearly 75% of all the students believed that more than half of the advertising did not provide enough information. The results were similar to the results of the focus group interviews in this study. More than half of the respondents in each group did not believed advertised products in mobile advertising (SMS advertisements) as it provided inadequate information when compared with the traditional advertising such as magazines and television, at least they could see the appearance of the products. However, the questionnaires in Haller's study only completed by 500 university students in five metropolitan areas in the United States, which means that there were only 100 student samples in an area. It was also found that secondary school students in Beijing, mainland China held negative attitudes towards advertising in general with 40.2% of the interviewees did not like advertising and more than half of them (61.6%) did not trust the advertising (Zheng, et al., 2004).

General public

Although Shavitt, et al. (1998) claimed that general attitude toward ad was favorable, I think there is a conflict in the concept of attitude and the results. Assessing personal confidence as attitudes in the study, the results showed that most respondents did not believe in advertising. Therefore, I think that people tend to hold less favorable attitudes toward advertising. In sum, the attitudes of the people in different positions in the society such as the general public, university and even the advertisers (businessmen) themselves held negative beliefs and attitude towards conventional advertising, especially for the groups of students and the public.

Culture

In a board view, culture is defined as "a society's distinctive and learned mode of living, interesting, and responding to environmental stimuli. This mode is shared and transmitted between members" (Hanna and Wozinak, 2001:523). Culture can set up and facilitate group norm and values. It implies that cultures vary in different group of people. Hofstede (1980) has identified five cultural dimensions which can explain the human behavior under different cultures. The dimensions are power distance, uncertainty

avoidance, individualism/collectivism, masculinity/feminity, and term orientation.

Culture influences individual's beliefs and attitude (Hanna and Wozniak, 2001). American young people held higher levels of negative attitude towards advertising while British counterparts had more positive attitude than adults (Zanot, 1984). Savage (2005) found that many "compulsive consumers" in Hong Kong were more skeptical toward advertising.

People in different regions in mainland China may hold different attitudes towards advertising. A study reported that majority of Beijing people were irritated by TV ad (Zhao and Shen, 1995). However, the study of Pollay et al. (1995) showed that Chinese consumers had more positive attitude towards advertising than those in the West. Zhou et al. (2002) found that nearly half of the respondents from five major cities in mainland China reported that they generally had a positive attitude towards advertising and 69% of them found advertising was informative.

On the surface, it seems that people in different areas hold different attitude. Attitude may be driven from culture in their own region. Culture is the base of our belief, attitudes and behavior (Kolter, 2000). For example, the culture in Western countries is individualism while it is a collective culture in China which will lead to different responses to advertising. Therefore, I think that the underlying factor is culture rather geographic factor. Culture was not employed as one of the dimensions affecting attitude in this research since the sample was within the same group of people who shared the same culture. There was no difference in the culture within the same group of people.

Information processing and involvement

Attitude changes in two routes of information process: central and peripheral routes (Petty and Cacioppo, 1981). Central route is "attitude change as resulting from a person's diligent consideration of information that his or her feels are central to the true merits of a particular attitudinal position." Peripheral route means attitude is shaped by the cues and inference in persuasion context. In addition, different routes would affect attitude towards advertisements under high or low involvement (Petty, et

al.,1983). Petty et al. (1983) found that attitude and behavior were relatively highly correlated under high involvement (central route).

Time compression

As noted by Schlinger et al. (1983), time compression is "a process for transmitting audiovisual material at a rate faster than the original of production" (p.75). As time compression made the advertisement paces to be faster, the audience would have less time to assess and interpret the stimulus when they were exposed to the advertisements. Studies revealed that the speech rates of the speakers would affect the judgments about the speakers. When show talkers spoke in a normal or faster rate, audience perceived that the speech was more fluent, persuasive and credible than the speech at a slow rate (e.g. Miller et al., 1976). Schlinger et al. (1983)'s experimental research found that similar to the situation of talk shows, time compression of TV advertisements would affect the attitude towards the advertised brand positively or negatively, depending on the type of advertised products and the advertisement format. It was also found that time compression did not have influence on audience's purchase intention.

Exposure to the advertisement

The amount of advertising will influence attitudes toward magazine advertisements in a negative direction (Ha, 1996). Repeated exposure to advertisements would lead to a negative attitude towards advertisements in different media and ad avoidance (Elliott and Speck, 1998). A study reported that majority of Beijing people were irritated by TV advertisements and nearly 75% of interviewees thought that too much advertisements were available (Zhao and Shen, 1995).

2.3. Consumers' Attitude towards Internet Advertising

2.3.1. Characteristics of Internet advertising

Interactivity

Internet advertising is different from conventional advertising because it allows high level of interactivity. In a boarder aspect, interactivity is conceptualized as "a continuous construct capturing the quality of two-way communication between two parties" (Alba and Lynch 1997:38). Defined by Cho and Leckenby (1999:163), interactivity refers to "the degree to which a person actively engaged in advertising processing by interacting

with advertising messages and advertisers". Compared with the traditional advertising, consumers can actively involve in the persuasion process in the interactive Internet advertising (Roehm and Haugtvedt, 1999). It means that the interactive advertising is a two-way communication between the sender (advertiser) and receiver (consumer) through a media (Internet) which involves commercial messages. Some may argue that interactivity can be mediated by telecommunication channel like direct call (Carey, 1999), but interactivity also refers to "the extent to which users can participate in modifying the form and content of a mediated environment in real time" (Steuer, 1992:84). The consumers can change the presentation of the advertising, for instance, some websites allow consumers to personalize the website, an advertising carrier in the Internet. This kind of interaction can be only made on the Internet and it is not possible to happen in a phone call. Therefore, interactivity in the internet involves two aspects: machine interactivity (consumers can assess hypermedia content interactively) and person interactivity (advertiser and consumer can communicate through the medium) (Alba and Lynch, 1997).

The use of broadband Internet would allow more sites to use more graphics, animation and video to attract audience (Fleming,1997). However, animation might be a detrimental effect in another way round. It was found that animation would negatively influence the information seeking ability and information acquisition (Zhang, 2000). It might be due to the fact that overloading of information on the users caused by increasing attributes on the web sites would adversely affect the choice quality (Lee and Lee, 2004).

Mixed components in Internet advertising

Using a web page with a group package tour and different combination of five components (text, graphics, animation, hyperlink and video) as the testing subject, it was found that the advertising effectiveness, in terms of attitudes towards the advertisement, was the lowest when the advertisement was combined with text, graphics and animation but the highest in the combination of text, graphics and video. In general, the combination of video component generated higher level of advertising effectiveness since consumers could get more information about the travel destination and itinerary. However, when graphic, animation and video were jointed on a web page, the advertising effectiveness decreased to a lower level than only

the joint use of video and graphics or video and animation. It may be due to the information overload caused by increasing components. Also, consumers would spend more time to download the advertisement component and browsing the web page. Therefore, the use of too many components that required audience to spend time in downloading them would negatively affect the attitude towards the advertisement (Wang et al., 2007). The research of Pavlou and Fygenson (2006) indicated that the web site's response time (the time for downloading data from a web site) had a negative effect on the attitude towards getting information from the web site vendor. Moreover, research revealed that there was a significant relationship between information overload and executive stress (Owen, 1997).

2.3.2. Attitude towards Internet adverting in general

Although Internet has emerged for less than 20 years, its penetration and impact seems to be significant. The broadband penetration rate of households in Hong Kong was 66%, which was among the highest rates in the world (HKTDC, 2006). Internet advertising has been a crucial media in Asia (Yoon and Kim, 2001). Moreover, the application of mobile 3G and WiFi will further encourage the use of Internet in portable devices, such as

mobile phones and PDAs. In view of the trend, studying consumers' attitude towards Internet advertising is necessary. A study showed that the attitude towards Internet advertising would affect the web behavior. Wolin et al. (2002) found that when the web users had positive attitude towards Internet advertising, they tended to response to the Internet advertisements favorably.

Different from the attitude towards traditional advertising, the attitude towards Internet advertising in general was mixed. A research revealed that near one third of the respondents held positive attitude, one third held negative attitude and remaining one third held neutral view towards Internet advertising (Schlosser, et al., 1999). Although more than half of the respondents reported that Internet advertising was informative and trustworthy, majority of respondents rarely or never used Internet advertising to make purchase decisions and less respondents held favorable attitude towards Internet advertising than that of advertising in general (including media of television, print, radio, Internet, etc). However, the results may be affected by sampling bias. Since the sample of the Internet advertising interview was mainly composed by well-educated, young, white

and affluent males, this group of people cannot reflect the general public's attitudes towards mobile advertising.

Cho (1999) studied the relationship between the attitude towards Internet advertising in general and specific advertisement and he found that the two variables are positively related. The results revealed that respondents with positive attitude the Internet advertising would also hold positive attitude towards specific banner advertisement.

In terms of advertising intrusiveness and irritation, a comparative study about consumers' attitudes towards unsolicited commercial email and postal direct mail advertising showed that unsolicited commercial emails were more intrusive and irritating than direct mail (Morimoto and Chang, 2006). However, other variables may affect the level of irritation. For instance, the users may feel inconvenient when they access their email accounts for receiving emails from familiar sources.

Ducoffe (1996) found that television was ranked as the most valuable source of advertising, while the Internet was the second last source. Majority (74%)

of the respondents claimed that they have never made purchase on the Internet. The results may be because the Internet was a new media at that time and the people were still accustomed to make purchase in a traditional way. On the other hand, the Internet was perceived as an evolving advertising medium by the respondents.

2.3.3. Beliefs about the Internet advertising

Since the Internet is viewed as an information provision medium, Internet advertising may be associated with cognitive factors affecting attitude in most occasions (Schlosser et al., 1999). Hence, beliefs affecting the attitudes towards Internet advertising are similar to that of traditional advertising in general.

There are four beliefs that appear to be most relevant to the understanding of attitude towards Internet advertising, namely informativeness, entertainment, irritation and credibility. Ducoffe (1996) suggested that informativeness, irritation and entertainment were related to the advertising value, a perceived value of Internet advertising significantly. Brackett and Carr (2001)'s research indicated that college students had opposite beliefs about

Internet advertising when compared to the businessmen sample in Ducoffe (1996)'s study. The researchers added a new belief construct, credibility, in testing college students' attitude towards advertising. Advertising credibility was one of the antecedents affecting the attitude towards advertising (MacKenzie and Lutz, 1998). While Ducoffe (1996)'s sample did not find Internet advertising to be irritating, annoying nor insulting to people's intelligence, Brackett and Carr (2001)'s student sample did. It was also found that entertainment and credibility of advertising affected attitude towards Internet advertising directly. Schlosser, et al. (1999) applied similar attitudinal items to measure the attitude towards Internet advertising. The first item was advertising utility (e.g. "most advertising is informative") which could be interpreted as informativeness. The second was indignity (e.g. "insults my intelligence"), which was similar to the meaning "irritation". The third one was trust (e.g. I feel I can trust advertising" and "products that I have used usually live up to the promises of quality and performance made in their advertisements", which can be interpreted as credibility of advertising.

Other belief dimensions employed in predicting attitude towards traditional advertising were also applied to that of Internet advertising. The economic and social roles of Internet advertising were also used to predict the attitude, which were employed to predict attitude towards traditional advertising in previous studies (e.g. MacKenzie and Lutz, 1998). Apart from the above beliefs, Schlosser, et al. (1999) also employed price perception (economic role) and government regulation on the content of the advertisement (social role) to predict the attitude towards Internet advertising. However, the results showed that the attitude towards Internet advertising was mainly influenced by informativeness and entertainment dimensions.

Based on Polly and Mittal (1993)'s belief – attitude toward advertising model, Wolin et al. (2002) applied the same seven belief dimensions (product information, hedonic pleasure, social role and image, materialism, falsity or no sense and value corruption) in predicting the attitude towards Internet advertising. The results showed that the first three dimensions were positively related to the attitude, while the last four items were negatively related to the attitude, in which the results were same as Polly and Mittal's (1993) findings.

2.3.4. Other factors affecting attitudes towards Internet advertising

Receivers' characteristics

Gender

Males appeared to exhibit more positive beliefs and attitude towards Internet advertising. They tended to purchase from the Internet and surf on the Internet and more likely to surf on the internet for functional and entertaining reasons while females tended to surf on the Web for shopping. It may because females were more concerned about online privacy than males (Sheehan, 1999).

Compared with other traditional media (TV, magazine, newspaper, radio), males believed that Internet advertising was more useful, informative and enjoyable than newspaper advertising, more enjoyable than magazine advertising and more useful than radio advertising. In contrast, females believed that Internet advertising was more annoying than newspaper advertising, more offensive than radio advertising and more offensive and deceptive than TV advertising. However, they believed that Internet advertising tended to be more useful than TV advertising (Wolin and Korganokar, 2005).

However, another study showed that American male would have varied attitude towards banner advertisements when their internal judgment increased or decreased. On the other hand, females were more flexible and innovative in their advertising recognition, and they exhibited a more stable attitude towards banner advertisements than the male consumers (Palanisamy, 2005).

Social status and age

Ducoffe (1996)'s study conducted with the businessmen found that consumers did not find Internet advertising was irritating and expected Internet advertising could produce positive economy for the society. However, different from the results of Ducoffe (1996)'s study, students in another research thought that Internet advertising was irritating, annoying or insulting to people's intelligence (Brackett and Carr, 2001). Brackett and Carr (2001) found that two demographic variables (major subject and gender) had significant relationships with attitudes towards Internet advertising, while age had a little impact on the attitudes.

Perceived risk

It was found that perceived risk is the most important factor affecting Chinese adoption of online banking. Different from the findings in the West, convenience, ease to use and access to a wider range of services free from time and place were not highly important factors affecting attitude towards Internet and mobile advertising but perceived risk (Laforet and Li, 2005; Trappey and Trappey, 2001). It may be due to the low security on the Internet and prevailing cheating behavior in mainland China.

Prior experience

Prior knowledge would affect the information processing during the formation of attitude because information learnt from past experience would affect the formation of attitude (Hanna and Wozniak, 2001). It was found that prior experience with using computers and new technology discouraged the adoption of online banking (Laforet and Li, 2005). Another research indicated that prior negative experiences would lead to advertisement avoidance behaviors. Prior negative experiences were indicated by "dissatisfaction and perceived lack of utility and incentive for clicking on the Internet advertisements" (Cho and Cheon, 2004).

2.4. Consumers' Attitudes towards Mobile Advertising

2.4.1. Definition of mobile advertising

The conceptualization of mobile advertising seems unclear. Terms like mobile marketing and mobile advertising are being used in academic articles but it seems that they do not have an explicit definition. Both terms are interchangeable: they refer to the same phenomenon. When referring to the distribution of message and promotion, mobile marketing (Kalakota and Robinson, 2002) and mobile advertising (Pura, 2002) were used.

Advertising is "a paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action, now or in the future" (Richard and Curr, 2004:74). The definition has identified five concepts in advertising: it is paid, non-personal, has an identified sponsor, involves mass media and aims at persuading or affecting receivers' actions. A clarifying footnote is presented in the article: "mediated communication is that which is conveyed to an audience through print, electronics or any method other than direct person-to-person communication"(p.74). It implies that mobile advertising is included in the scope of advertising.

The definition of marketing which is the one accepted by American Marketing Association (AMA): “Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in way that benefit the organization and its stakeholders”. The relationship between marketing and advertising is hierarchical. Marketing is a wider concept while advertising is a narrow one (Täithnen, 2005). This study will focus on mobile advertising.

The use of wireless Internet in the portable devices like mobile phones and PDAs further enhances mobile advertising or ‘wireless advertising’. This type of advertising is defined as ‘sending advertising messages to mobile devices such as mobile phones or PDAs through wireless network” (The Wireless Advertising Association, 2006). Edward (2005) also agreed with this point of view about mobile advertising: “Mobile advertising is the practice of targeting consumers via cell phones, PDAs, or other mobile devices with commercial messages”(p.1).

Similar to the traditional media and the Internet, Barnes (2002) categorized mobile advertising into two main types: push and pull advertising (illustrated in Figure 2.1).

Push advertising

It refers to send advertising messages to consumers through an alert or SMS text message. This marketing strategy is often employed in mobile advertising and SMS is the major communication tool. This type of marketing often promotes free content by putting the advertisements on browsed wireless platform. The number of SMS ads would increase from 676 million in 2002 to 18.6 billion by 2006 (Borozo, 2002). Research showed that SMS was a more effective advertising channel for the age group of 15-24 years, who were very difficult to be reached by other media (Puca, 2001).

Simple push advertising is a prevalent advertising type in current, which is mainly carried out through simple text messages, i.e. SMS. Limited by existing technology, each SMS only contains 160 characters at the maximum. In other words, the maximum characters that carried by a SMS ad is 160. In general, according to the Wireless Advertising Association (WAA), there are 34 to 160 characters in a SMS advertisement (MobileInfo, 2001). Other types of services such as WAP and iMode is not as popular as SMS in current. For i-Mode ad alert in Japan, it is usually in text-based form

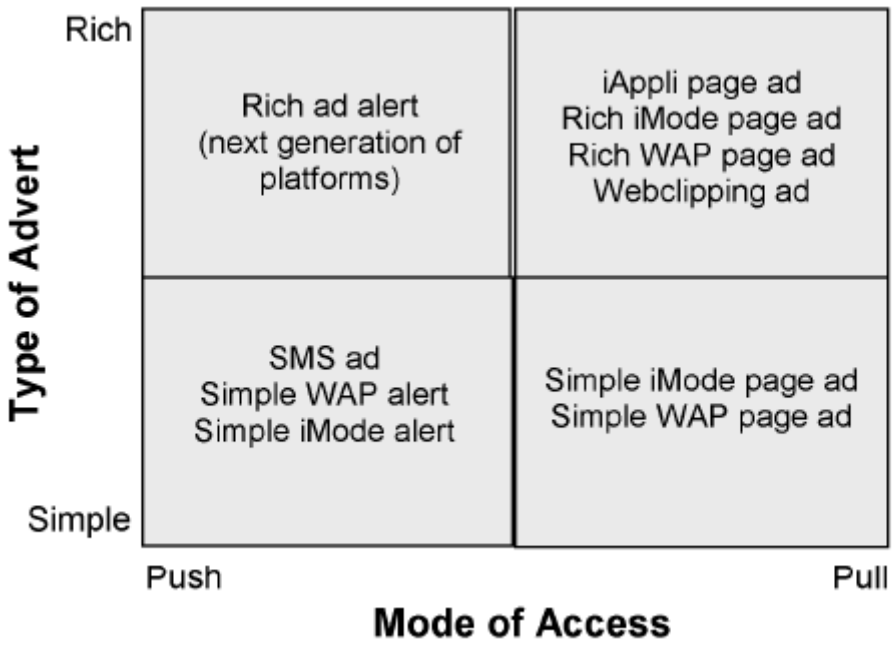
with linkage to cHTML pages. WAP alert involves sending email ad alert with a linkage to a WAP page. It is expected that the marketing strategy will be shifted from current simple push type in the lower left-hand quadrant to richer push marketing in the left-hand quadrant in future (shown in Figure 2.1), with the supply of more sophisticated hardware and software and faster networks in future. The technology advance (e.g. MMS advertisements for 3G), existing 3G network and the potential 4G network; the latest 3G handset will facilitate the shift. However, due to the relative high cost for receiving MMS advertisement, free SMS advertisement is still a popular push advertising method.

Pull advertising

Pull advertising can operate at any wireless platform with a browsing content function. It means that pull marketing involve putting advertisements on browsed wireless content, and it often promotes free content.

Figure 2.1 Categorization of mobile marketing

Source: Barnes (2002); Barnes and Scornavacca (2004)



2.4.2. Characteristics of mobile advertising

When compared with the traditional media, mobile advertising employs completely different communication devices – mobile phones and PDAs and a new media—Internet, thus its characteristics are unique. The strong "selling points" can enable mobile advertising to become a fast emerging advertising channel. Dickinger et al. (2005) defined mobile advertising as "… using a wireless medium to provide consumers with time-and-location-sensitive, personalized information that promotes goods,

services and ideas, thereby benefiting all stakeholders". Baurer et al. (2005) suggested that mobile advertising is characterized by three main features: personality, ubiquity and interactivity. In addition, Barwise and Strong (2002) and Cuitta (2005) claimed that mobile advertising is based on permission. In the following section, I try to organize the above features and support them with other sources of evidence and point of view.

Personalization

Mobile phones have become fashion and necessity of young people. They tend to personalize their mobile phones by using special brands, color, size, display logo and ringtone (Bauer et al, 2005). Many of the participants in the focus group interviews in this study decorated their mobile phones with special accessories, pictures and ringtones. Thanks to the advance of technology, much more data can be stored in the mobile phones by micro-SD cards in lower costs, in which the data is transferable to the personal computers and laptops. Over 90% of the participants in the focus group interviews in this study took many personal pictures and saved them into their mobile phones and made a favorite play-list of pop music in them. Since the users have a very close relationship with their mobile phones, they

will personalize their mobile phones, including the appearance, ringtone or even the message received. It means that the users will select the advertisements that they are really interested in. Thus, the mobile advertising can be viewed as a highly personalized marketing (Baurer et al., 2005) and implies that targeting at different consumer groups is needed (Robins, 2003).

Ubiquity

Ubiquity is one of the most important and unique features of mobile advertising. The advertising can assess to customers at anytime and anywhere through their mobile devices. The development of computer technology and the living style of people allow mobile advertising to be 'ubiquitous', i.e. to be presented in anywhere and anytime.

In the content of computer science, the next era will be "ubiquitous society". Sakamura (1984) introduced the idea of "Computing Everywhere and Anytime", which is known as the concept of ubiquity (cited in Kim and Moon, 2005). This concept has led to TRON (The Real-time Operating System Nucleus) and HFDS (Highly functionally Distributed System) for

small appliances. The project of TRON has started since 1984 and aims to build up a computerized society where all the devices in our daily lives will be equipped with micro-computers. The devices will be supported manually and connected together to form an intelligence system, which is called HFDS. TRON is mainly used in in small devices like PDAs and personal computers (Sakamura 1984, cited in Wikipedia, 2006). TRON is used in millions of electronic devices, which was one of the most popular computer systems (Wikipedia, 2006). This technology enables data to be delivered to the consumers' small appliances such as PDAs and thus facilitates the mobile advertising.

Since the geo-location technologies had not developed well, location-based pull services were more commonly used. For example, the users informed the service operator about their existing position and the users would get the offers near their locations (Bauer et al., 2005). Similar 3G services had been applied to travelers. Cooperated with the 3G license holder Vodafone, Volvo had developed a safeguard system called "On Call". When the airbag in a Volvo car was broken, the system would alert the call center and a call

would be made from the center to ensure if the drivers and passengers were injured (Robins, 2003).

This feature will be further developed and popular among people when times go by. It was estimated by UBS Warburg that revenues of US$4 billion would be generated from providing personalized information to the drivers (Harvey, 2001). In Hong Kong, "3" provides location-based commercial messages to their customers through SMS or MMS advertisements. For instance, when the company detects a customer is located in Monkok, it will inform the customer that there is a discount offer by a shop in Langham Place by SMS or MMS immediately.

The living style of consumers and personalization further enhances the ubiquity of mobile phone. Mobile phones have been our intimate belongings, especially for the young people. They regarded mobile phones as a crucial communication tool and the expression of their personality (Baurer et al., 2005). As mentioned before, mobile phone has become a part of our daily lives. Apart from communication purpose, my focus group participants indicated that mobile phones served as their schedule, camera, MP3 player

and alarm clock. They switched on the phones all the time and some of them even put it aside the bed when they were sleeping. It was reported in the United States in some years ago that once people did not bring along their cell phones, they felt upset and uncomfortable. This phenomenon is called 'syndrome of over-reliance on mobile phone'. The intimacy with the device thus facilitates the ubiquity of mobile advertising.

Interactivity

Similar to the Internet advertising, mobile phones allow consumers to response to the advertiser directly (Bauer et al, 2005). Different from the conventional advertising media such as TV, printed ad and radio which only allow one-way communication, the mobile advertising is two-way communication enables receivers' (mobile phone users) involvement due to the Internet technology. The consumers' responses may be generally induced by the benefits provided by the advertisers in this stage. The receivers can response to the advertisements directly for their own benefits in a shorter time at anywhere. Therefore, the interactivity of mobile advertising is related to the ubiquity and time-sensitive features. This kind

of advertising also benefits the advertisers since they can understand the needs of their consumers directly and quickly in a lower cost.

Time-sensitive

Since many people bring along their mobile phones almost all the time, mobile advertising can provide updated commercial messages to consumers through their mobile devices. For example, “3” company sends MMS to their customers with updated news and subscription for further news content. The company updates their news regularly every day.

2.4.3. Advantages and drawbacks of mobile advertising

Advantages

In view of the special features of mobile advertising, it was reported that European marketers thought that SMS marketing encouraged interactivity, greater customer reach, higher response rate (five times higher than that of direct mail) and quick message delivery with lower costs (Forrester Research, 2002). It means that marketers can collect updated market information from consumers directly in the shortest time and at lower costs (Kavassalis et al. 2002). From consumers’ point of view, they can get the

latest information at anywhere and they have the options to read or ignore the advertisements which they like or dislike.

Disadvantages

The small size of mobile phones allows people to bring along all the time, but it also means that the space for mobile advertisement is small because of limited user interface (e.g. screen size). Moreover, SMS only allows single short message with 160 characters at maximum (Kavassalis, et al., 2002) and MMS also only allows limited texts and graphics in an advertisement. The limited advertisement may not provide enough information for the consumers. In addition, due to the ubiquity nature, consumers may feel more annoying and irritating when they receive some mobile advertisements without their prior permission.

2.4.4. Attitude towards mobile adverting in general

Since the field of mobile advertising is newly developed, it appears that there are only a few studies about mobile advertising employed theoretical and methodological approaches when compared with the literature of traditional and Internet advertising. Similar to the results about attitude

towards advertising in general, Tsang et al. (2002) found that the general attitude towards mobile advertising was negative. Another research also indicated that overall attitude towards advertising was unfavorable, associated with annoying, excessive and offensive description (Lee et al., 2006). Caroll, et al. (2005) found that the over half of the respondents did not favor mobile advertising in New Zealand. Different from Tsang, et al. (2002)'s study in Taiwan, Caroll, et al. (2005) found that even consumers had given permission, the content of message was relevant and the message came from trusted channel like wireless service provider, there was only 31% of respondents would accept the SMS enthusiastically.

2.4.5. Beliefs about attitude towards mobile advertising

Similar to the studies about the attitude of traditional advertising and Internet advertising, there are four belief dimensions are most relevant to attitude towards mobile advertising, namely informativeness, irritation, entertainment and credibility. Tsang, et al. (2002) found that entertainment, informativeness, irritation and credibility significantly influenced attitude toward mobile advertising, while entertainment influences most the mobile advertising attitude. Lee et al. (2006) found that informativeness and

entertainment associated most with positive attitude while irritation associated with negative attitude. Another study showed that negative attitude could be improved by entertainment element (Lee and Jong, 2008). Surprisingly, a study indicated that credibility of advertisers might not have influence on the attitude towards mobile advertising (Drossos, et al. 2007a). It may be due to the fact that the experiment was carried out under the condition that the mobile advertising was permission-based. Permission-based marketing would reduce the negative effect of unfamiliar advertisers. Moreover, majority of participants (76.3%) received only a few mobile advertisements before the experiment (Drossos, et al., 2007b). The researchers also suggested more investigation in the effect of credibility of advertisers.

A study conducted in mainland China found that personalization was one of the most important factors in affecting the attitude towards mobile advertising (Xu, 2006). The survey of the study was conducted either online or offline. The offline version of the questionnaire was a printed version of online version. Respondents filled in the questionnaires themselves for both versions. There would be a bias that the respondents may interpret the

questions in the survey in a different way without the guidance of an interviewer. Only 143 usable responses were collected which may not be able to reflect the public's evaluations on mobile advertising statistically.

2.4.6. Other factors affecting attitudes towards mobile advertising

Permission-based advertising

Since mobile phone is a highly personal communication tool of the user (Baurer et al., 2005), prior permission is important for mobile advertising (Kavassalis et al., 2003). Permission-based marketing means that consumers permit marketers to educate them on its products (Kavassalis et al., 2003). Cuitta (2005) pointed out that the mobile advertisers have to prevent spam when sending text advertisements to cell phone users since they can determine which advertisements they would receive and read.

Barwise and Strong (2002) found that most of the triallists (93%) were satisfied with the permission-based services and majority (84%) of them would recommend it to their friends. They also found that the text adverts would generate a high level of readership, brand awareness (recall of the

brands) and direct behavior responses. Therefore, explicit permission will generate a high level of acceptance and satisfaction of the users. Tsang, et al. (2002) also found that permission-based mobile advertisements would favor the attitude towards mobile advertising. However, the method used in testing the effect of permission seems unclear in the study.

Incentives

In Finland, Radiolinja Oy obtained consumers' permission for sending marketing messages when signing contract with the mobile network operator. The company also attracted consumers to permit their advertising by providing incentives on its official website. The mobile advertising was conducted in a marketing-mixed approach, which means that the company also launched the same campaign in other conventional media such as television, radio, in print, etc. The company got 30% response rate from the whole campaign, in which the mobile advertisement response rate was far higher than that of the direct mail – 10% response rate (Borzo, 2002).

Apart from generating high level of acceptance satisfaction, prior permission also encourages consumers to participate in the interactive

marketing campaigns in long run, provided that they are given some incentives (Forrester Research, 2002b). Studies also indicated that incentive would also favor intention of receiving mobile advertising (Drossos, et al., 2006; Tsang, et al., 2002).

Wireless service provider's control and brand familiarity

Three large-scale studies are used to analyze the factor affecting consumers' acceptance. The factors are WSP (wireless service provider) control and users' permission. It was found that 74% of consumers trusted WSP most to control and deliver commercial SMS to them, while only 20% of them preferred major brands like McDonald's and Coca-Cola. In addition, it was reported that 63% of mobile users responded to SMS marketing, which held a similar level of acceptance of TV (68%) and radio (65%) when the messages were delivered by a trusted source, such as the WSP or major m-portal. (Enpocket, 2002). Based on the results from the three studies, Barnes and Scornavacca (2004) suggested that users' permission was the most important factor affecting acceptance. For instant, although the unknown company (brand) sent commercial messages to the mobile users without WSP control, the prior permission from the users might also

generate acceptance towards the advertisement. In contrast, without permission in advance, even though the message was sent by trusted company under WSP control, the acceptance level would be low. However, the results are only derived from secondary data and literature without first hand empirical evidence. Aaker (1991) indicated that brand equity would affect the information process and thus create positive feeling and attitude towards the brand and intention to purchase. Hence, the highly familiar brand would encourage consumers to receive and read the mobile advertisements.

Receivers' characteristics

Gender and age

Although previous literature indicated that demographic factors such as gender, age (Shavitt et al., 1998), education and income (Alwit and Prabhaker, 1992; Shavitt et al., 1998) affected consumers' attitude toward Internet and traditional advertising respectively, recent research showed that age was not a determinant of attitude (Brackett and Carr, 2001). However, another research revealed that young people (ages 16-24) had the most favorable attitude towards SMS advertising in the United Kingdom

(Trappey III and Woodside, 2005). A survey conducted among 2043 respondents reported that age and gender interacted with the response to SMS campaigns for generating TV watching. Female audience in the age group of 16-17 (8.6%) tended to watch TV in response to an SMS campaign than male audience (4.9%). The trend reversed when the age increased. Compared with the female viewers in the age group of 18-24 (14.2%), male audience in the same age group (17.7%) tended to watch the TV program when they had received SMS campaign alerts.

Interactivity

An experimental study showed that interactivity (sending a SMS to learn more about the testing subject brand, Goldy) had a negative effect on the attitudes towards the advertisements and the brand as well as purchase intention (Drossos, et al, 2007b). The authors explained that it might be because the testing subject was chocolate bar which involved in a lower purchase importance level in the pre-test. Also, to prevent confounding effects in the experimental design, the unique selling proposition of the chocolate was ignored which may further lower the purchase importance level. It may be also due to the perceived cost and time involved in the

interaction. The participants in an experimental group received SMS advertisements about Globy (chocolate bar). To learn more about Goldy, they needed to send a SMS to the advertiser for further information. This interaction process would incur the costs for users in terms of money and time. Thus, the cost of sending SMS reply to the brand would be one of the factors inducing the negative influence of interactivity.

Interactivity may not have a favorable effect on attitudes due to information overload. Some research about advertising effectiveness of websites indicates that certain components in a webpage would adversely influence the attitude towards the advertisements. Wang et al. (2007) found that advertising effectiveness, in terms of attitude towards the advertisement, was the lowest when the advertisement was combined with text, graphics and animation but the highest in the combination of text, graphics and video. In general, the combination of video component generated a higher level of advertising effectiveness since consumers could get more information about the travel destination and itinerary. However, when graphic, animation and video were jointed on a web page, the advertising effectiveness decreased to a lower level than only the joint use of video and graphics or video and

animation. It may be due to the fact that the information overload was caused by increasing components. Also, consumers would spend more time to download the advertisement components when they were browsing the web page. The research of Pavlou and Fygenson (2006) indicated that the web site's response time (the time for downloading data from a web site) had a negative effect on attitude towards getting information from the web site vendor. Therefore, the use of too many components that required audience to spend time in downloading them would negatively affect attitude towards the advertisement or the advertisers. Another study indicated that leisure time was important to obtain information when using the Internet (Bellman, et al, 1999). Time resources would be critical for attitude towards the 3G advertisements because when the consumers read the advertisements for entertainment purpose, they do not want to spend their leisure time to download the advertisement components.

Another research also indicated that animation would have a negative effect on the attitudes towards the website. Zhang (2000) found that half of the participants in the lab experiment completely agreed they would prefer no animation when they seek for information in a webpage. The participants

were required to perform information-seeking tasks on a webpage. They would be rewarded cash prizes according to the accuracy of the information that they found within the shortest period of time. The author suggested that same as the animation, the online banner advertisement would be also viewed as a block for information seeking process. However, the results may not be applicable to mobile advertising. First, the animation in this paper refers to any motion which is not a primary stimulus in the website. It means that the animation in the experiment does not to provide extra information for the Internet users. Second, the advertisers realize that the screen of the mobile phone is much small than that of computer and the time spending on mobile Internet surfing is more limited, they will make the advertisements precisely, which means that the banner advertisements or animations would only deliver the primary commercial information to the users.

CHAPTER 3: MODEL DEVELOPMENT

3.1. Proposed Model

3.1.1. Theoretical perspectives

Several theories which describe the factors affecting consumer behavior exist in marketing, communication and psychology literature. The theories include theory of reasoned action (TRA) (Ajzen and Fishbein, 1980) and later extended into theory of planned behavior (TPB) (Ajzen, 1991), the technology acceptance model (TAM) (Davis, 1989; Davis, et al., 1989) and innovation diffusion (Roger, 1995). Since attitude is one of the important components in the above theories, a review of the formation of attitude will be introduced first.

Attitudes are defined as “learned predispositions to respond in a consistent manner in respect to a given object” (Hanna and Wozniak, 2001:174). An attitude can be also described as a “general and enduring positive and negative feeling about some person, object, or issue” (Petty and Cacioppo, 1981:7). It means that attitude is learnt from previous personal experiences or external information from a product, social interactions and other

mediums, including mass-media. It is a consistent concept: stable and enduring over a period of time. It can be also viewed as people's evaluations of their perception of something. Consistently, attitude towards advertising is defined as "a learned predisposition to respond in a consistently favorable or unfavorable manner toward advertising in general" (MacKenzie and Lutz, 1989).

Rosenberg and Hovland (1960) viewed attitude as a three-component construct (cited in Ajzen and Fishbein, 1980). The three major components in attitude are affective, cognitive, and conative. The affective component is the sympathetic nervous responses and verbal statements of belief. It is an affective evaluation from a person's emotions or feelings about a particular object. The cognitive component is the perceptual responses and verbal statements of belief. In other words, it is a cognitive evaluation of the entity which constitutes an individual's beliefs about an object. The conative (behavioral) component is a verbal indication or typical behavioral tendency or likelihood of an individual, and this component is represented by behavioral intention (Ajzen and Fishbein, 1980).

People's belief is an important factor contributing to the formation of attitude. Belief is an "information that a person has about other people, objects, and issues." (Petty and Cacioppo, 1981:7). This information can carry positive, negative or neutral messages. Accordingly, attitude towards advertising can be generated from the information (belief) learnt in our daily lives.

Among the mentioned models, the technology acceptance model (TAM) (Davis, 1989) appears to be the most widely cited and replicated empirically (Agarwal and Prasad, 1999; Lin, et al., 2007). The TAM proposes that an individual's intention to adopt a new technology is not only guided by attitude but also beliefs the individual holds about its perceived ease of use and perceived usefulness. The TAM includes five concepts: perceived ease of use, perceived usefulness, attitudes towards use, intention to use and actual use. The proposed model, TRA, includes four concepts: behavioral attitudes, subjective norm, usage intention and actual use. The inclusion of subjective norm is a crucial addition to the model since it fills the gap in TAM, the effect of social influences. Researchers have recently acknowledged the limitations of TAM and included additional aspects as

components affecting behavior, e.g. subjective norm, perceived enjoyment, facilitating conditions (Legris et al., 2003; Nysveen, et al., 2005). TAM will restrict the understanding of attitude towards mobile advertising. TRA examines the influence of various beliefs affecting attitudes but TAM only limits the choices on the two innovation belief components, perceived ease of use and perceived usefulness. Moreover, perceived ease of use is not applicable in receiving and reading mobile advertisements as these actions do not involve new technology and difficulty in using the technology. Perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989:320). Mobile advertising has existed for a long period of time and consumers have been accustomed to receiving and reading it. It is very easy for general mobile phone users to receive and read advertisements in their mobile phones. They only need to press a button to open and read the advertised messages. Testing the effect of perceived ease of use on attitude seems redundant and it would limit the understanding of consumers' attitude towards mobile advertising.

Theory of innovation diffusion predicts that media and interpersonal contacts provide information, influence opinion and judgment. Innovation can be observed in four stages: invention, diffusion through the social system, time and consequences (Roger, 1995). Roger (1995) suggested that there are five adopter categories in the diffusion process: innovator, early adopter, early majority, late majority and laggard. The diffusion theory has received criticism for replying too much on the innovators and early adopters to market services to consumers who may hold different value perceptions and need to the use of the services (Moore, 1991). Adopting TRA will not only focus on the attitude to technology at all.

The TPB was proposed as an extension of the TRA to account for conditions in which people do not have complete control over their behavior (Ajzen, 1991). Perceived control is defined as the perception of a person of the ease or difficulty of performing the act of interest (Ajzen, 1991). The concept seems not suitable in this study because receiving and reading mobile advertisements do not account for the additional variance, i.e. the degree of personal control but behavioral beliefs and behavioral attitude.

Therefore, TRA was employed to study consumers' attitude and predict their intention to receive and read mobile advertisements. TRA model can predict an individual's attitude, subjective norm and their influences on intention and behavior. Attitude, intention and behavior are eventually determined by an individual's beliefs. TRA has been used to study consumer purchase intention and buying behavior in marketing (e.g. Chan and Lau, 1998; Miniard and Cohen, 1983; Shimp and Kavas, 1984).

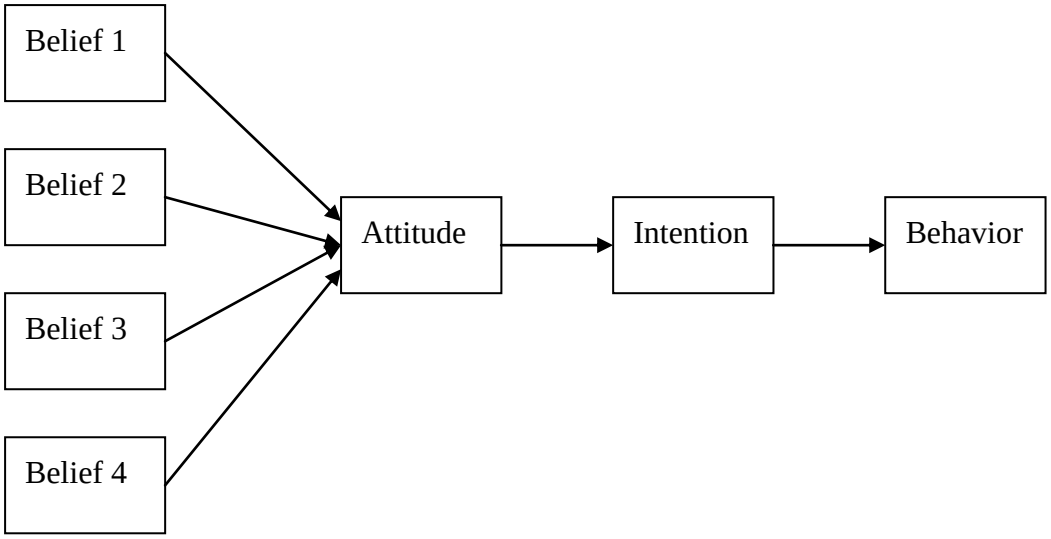
3.1.2. Relationship between beliefs and attitude

The proposed model is based on the TRA. The main conceptual ideas and the model constructs of the research are based on the TRA and Tsang et al.'s (2002) study about mobile advertising in Taiwan. The main structure of Tsang et al. (2002)'s model is also developed from TRA model.

The theory of reasoned action (TRA) is developed by Fishbein and Ajzen (1975) and it can predict the factors affecting attitude, intention and finally our behavior. The main factor affecting a person's attitude is belief. Defined by Fishbein and Ajzen (1975), belief is "the informational base that ultimately determines his attitudes, intentions, and behavior" (p.14). "A

person's attitude is a function of his salient beliefs at a given point in time" (Fishbein and Ajzen, 1975: .222). Belief is then considered as an important factor in the formation of attitude. As noted by Petty and Cacioppo (1981), belief is an "information that a person has about other people, objects, and issues" as well as the information "may have positive, negative, or no evaluative implications for the target of the information" (p.7). Hence, belief can be seen as what people perceived and this perception will held to form an attitude. An attitude can be described as "an index of the degree to which a person likes or dislikes an object" (Ajzen and Fishbein, 1980:64) and "general and enduring positive and negative feeling about some person, object, or issue" (Petty and Cacioppo, 1981:7). It can be viewed as people's evaluations of their perception of something. Figure 3.1 shows the relationship between belief, attitude, intention and behavior.

Figure 3.1 The model of theory of reasoned action



In the proposed model, the belief dimensions affecting mobile advertising include entertainment, informativeness, irritation, credibility, ubiquity, personalization, opt-in permission and opt-out permission. The proposed model is shown in Figure 3.2. These belief dimensions were selected from literature and frequency of the factors mentioned by the focus group participants. The details of frequency of the factors were shown below:

- Entertainment :23 times
- Informativeness : 23times
- Irritation : 18 times
- Permission/spam : 18times

- Ubiquity : 15 times
- Credibility : 14times
- Others: Title of Mad, incentive, image, animation, brand, screen size, product/service, attractiveness, privacy, interactivity

3.1.3. Relationship between attitude and behavior

The relationship between attitude and actual behavior is arguable. A research revealed that participants claimed that they had negative attitude towards cheating but they did cheat in the following test. In contrast, another research showed that people had positive attitude towards coupon usage and in fact they were more likely to use coupons when purchasing (Corey, 1973; Laurie, 1998; cited in Hanna and Wozniak, 2000). Favorable attitude do not lead to a favorable behavior in every circumstance, but attitude often tends to guide the behavior. The theory of reasoned action (TRA) suggested by Fishbein and Ajzen (1975) is often used in analyzing how attitude determines behavior in the field of marketing, for instance in advertising (e.g. Tsang et al., 2002). Defined by Fishbein and Ajzen (1975:8), attitude can be viewed as “a latent or underlying variable that is

assumed to guide or influence behavior… attitude cannot be observed directly but have to be inferred form observed consistency in behavior".

Attitude towards a behavior is determined by a belief about the consequences of the behavior. A belief forms towards an object through learning, e.g. observation or information given by external sources. In the same way, subjective norm on the behavior is affected by normative beliefs about the behavior. The attitude and norms influence the behavior through the intention to perform. To conclude, behavior is influenced by behavioral intention and subjective norm suggested by the TRA model.

Ajzen and Fishbein (1980) further defined the variables in details. They proposed two components, attitude (ATT) and social norm (SN). They affect behavioral intention (BI), which is the immediate antecedent of behavior (B). The attitude component is determined by belief of consequences and the individual's evaluation of the consequences. Another component, social norm, a perception of whether other people prefer the individual to engage in a particular behavior, which is determined by normative belief (NB) and his/ her motivation to comply with the

expectations from a group of people (MC). A research about coupon use shows that intention was the major mediator of attitude and perception of social norm toward behavior (self-report of coupon usage) (Shimp and Kavas, 1984). Bagozzi (1981) also supported the mediating effect of intention on the relationship between attitude and behavior.

Based on Fishbein behavioral model, Miniard and Cohen (1983) suggested the motivation affecting attitude can be divided into two separated dimensions: personal and normative. Both types of motivation together can influence the behavior through the impact of behavior intention. Although the two dimensions were tested to be separated, some normative dimensions were contaminated in personal belief measures. In view of the relationship between attitude, intention and behavior, it is important to study the formation of consumers' attitude towards mobile advertising and the intention to receive and read the mobile advertisements.

3.1.4. Subjective norm

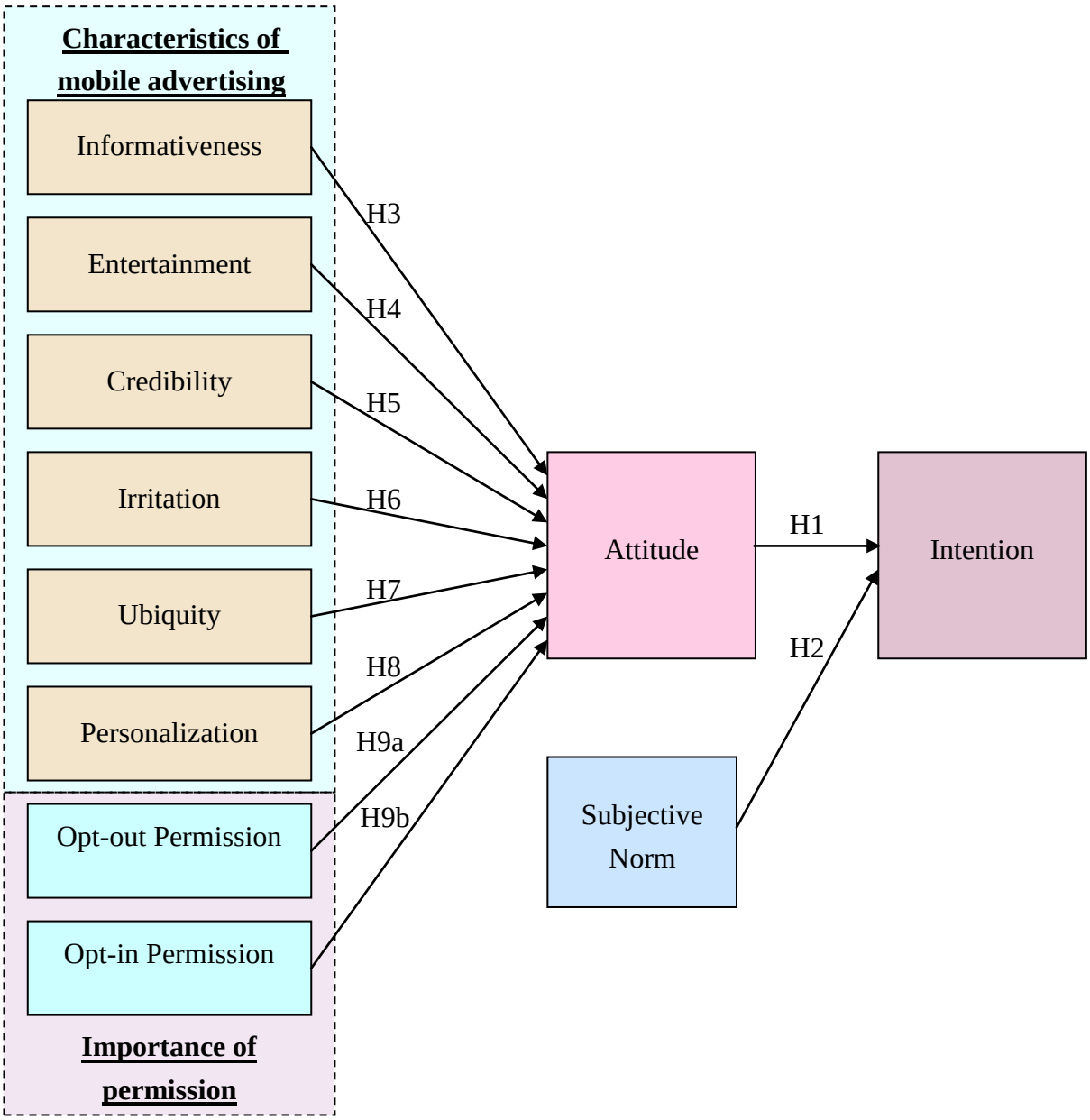
Another important component in the TRA that affects a person's behavior or behavior intention is subjective norm. The subjective norm reflects a

person's perception about whether people of significant importance or closeness to them or who they respect and think that they should perform a particular action (Ajzen and Fishbein, 1980). It means that subjective norm is determined by social influence which is exerted by reference groups.

3.2. Hypothesis

There are nine hypotheses in this study. Figure 3.2 shows the hypotheses in the model, that is, the attitude towards mobile advertising and intention to receive and read mobile advertisement model.

Figure 3.2 The attitude towards mobile advertising and intention to receive and read mobile advertisement model



3.2.1. Relationship between attitude and intention

The TRA (Fishbein and Ajzen, 1975) proposes that attitude influences behavior through intention. Behavioral intention is "the strength of a person's conscious plan to perform the target behavior" (Mykytyn et al., 2005). A research about coupon use showed that intention was the major mediator of attitude and perception of social norm toward behavior (self-report of coupon usage) (Shimp and Kavas, 1984). Bagozzi (1981) also supported that mediating effect of intention on the relationship between attitude and behavior. Therefore, we hypothesize that:

H1: Attitude towards mobile advertising will lead to higher behavioral intention to receive and read mobile advertisement recurrently in future.

3.2.2. Subjective norm

Apart from one's attitude towards an object, another important variable determining intention is the subjective norm in the TRA model. Subjective norm refers to an individual's perception of what important people think he or she should or should not do, and the individual's inclination to comply

with their specific desires (Ajzen and Fishbein, 1980).

One of the assumptions of the TRA model is that human beings are rational. Basic economic theory states that an individual often maximizes his or her utility. Under this circumstance, consumers only accept mobile advertising when they perceive benefit in receiving and reading mobile advertisements (Kavassalis et al., 2003). The "use-and-gratification" approach can explain the utility perception of mobile advertising (Bauer et al., 2005). This approach implies that people will consciously choose and employ certain media to satisfy specific needs since the mass media have social and psychological functions. Katz, Hass, and Gurevitech (1973) suggested "needs related to strengthening contact with family, friends, and the world". Social need will be a factor affecting an individual's intention to use mobile phone as well as to receive and read mobile advertisements. Mobile phones have become an important communication tool, especially for young people, to reinforce their social networks (Anon, 1999). Receiving forwarded advertised messages from an individual's reference groups is a kind of social needs or subjective norm that influences the individual's intention to receive and read the advertisement.

Different from Western society, the motivation to comply with reference group or important people is high in the Chinese society. Meeting the expectations of the most important people is a crucial practice. A study showed that maintaining relationships among Chinese people is important (Yang, 1992). Therefore, subjective norm is another important factor affecting intention in the Chinese society. We therefore put forward the second hypothesis as:

H2: The more positive the subjective norm, the higher the behavioral intention to receive and read mobile advertising recurrently in future.

3.2.3. Informativeness

TRA developed by Fishbein and Ajzen (1975) can predict attitude, intention and finally behavior. The main factor affecting a person's attitude is belief. Defined by Fishbein and Ajzen (1975), belief is "the informational base that ultimately determines attitudes, intentions, and behavior" (p.14). "A person's attitude is a function of his or her salient beliefs at a given point in time" (Fishbein and Ajzen, 1975: 222). Belief is considered as an important

factor in the formation of attitude. Katz, Hass and Gurevitech (1973) also suggested other two needs:

1. "Needs related to strengthening information, knowledge, and understanding";
2. "Needs related to strengthening aesthetic, pleasurable and emotional experience"

Informativeness is described as "the ability to inform customer of product alternatives for their greatest possible satisfaction" (Gao and Koufaris, 2006:43). Informatioiveness can be interpreted as the ability of advertising to deliver information to consumers. It was considered as the main factor of accepting advertising (Bauer and Greyser, 1968). Based on the studies of Bauer and Greyer (1968), Pollay and Mittal (1993) proposed that the beliefs contributing to attitude towards advertising could be explained in two levels, micro (personal) and macro (societal) factors. Personal factors included the attributes of production information provided in the advertisements. A study indicated that information contributed to the most of the attitude towards advertising (Mittal, 1994). Informative content is also essential on the Internet advertising. A research indicated that majority of the respondents

indicated that the Internet as an information source rather than an entertainment source (Johnson, et al., 1999). A survey revealed that 40% of respondents believed that majority of the Internet advertising was informative (Jupiter Communications, 1999). Ducoffe (1996) also adopted similar beliefs to measure advertising value of traditional and Internet advertising, "a representation of the perceived value of advertising to consumers", namely informativeness, deceptiveness, entertainment and irritation. It was found that informativeness, irritation and entertainment were the most important factors contributing to the advertising value. Lee et al. (2006) found that informativeness associated with positive attitudes towards mobile advertising.

The Optimum Stimulation Level theory states that people aspire to accomplish a certain degree of stimulation and collect information with intrinsic motivation (Hoffman and Novak, 1996). Information had been considered as the main factor in acceptance of advertising (Bauer and Greyser, 1968). Informative content is also essential for Internet advertising. A research found that the majority of the respondents regarded the Internet as an information source rather than as an entertainment source (Johnson,

Slack, and Keane, 1999). The third hypothesis in this study is:

H3: Informativeness has a positive effect on the attitude towards receiving and reading mobile advertising.

3.2.4. Entertainment

Entertainment element in advertising can fulfill consumers' needs for aesthetic enjoyment and emotional release (Ducoffe, 1996). Based on the studies of Bauer and Greyer (1968), Pollay and Mittal (1993) found that hedonic pleasure (entertainment) had a positive effect on the attitude towards advertising. Ducoffe (1996) adopted belief dimensions to measure advertising value, "a representation of the worth of advertising to consumers" (p.42). It was found that entertainment was one of the most important factors contributing to the advertising value. Tsang, et al. (2004) found that entertainment influenced mobile advertising attitude the most. According to a report from Informa Telecoms and Media (2007), it was expected that the global mobile entertainment market would generate revenues of $38.1 billion, compared to the recorded revenues of $18.8 billion in 2006. Full track downloads of music and ringtones would continue

to generate the highest part of revenues seen in the mobile entertainment industry, but mobile TV service would also generate revenues from $178million in 2006 to more than $1.8billion in 2011(Carr, 2006). Compared with the U.K. consumers, Hong Kong consumers tended to adopt hedonic entertainment services (download ringtones, games and wallpapers) than utilitarian transactions (some small amount payment) and information services (news, weather forecast and local area information, etc.) (Harris, et al., 2005). Even the utilitarian transaction and information services involved some hedonic aspects. Most of the respondents read entertainment news and bought tickets for leisure activities (Harris, et al., 2005). The perceived entertainment value of mobile advertisements would be one of the important factors affecting consumers' attitudes towards advertising. Hence, we hypothesize that:

H4: Entertainment has a positive effect on the attitude towards receiving and reading mobile advertising.

3.2.5. Credibility

Defined by McKenzie and Lutz (1989), credibility of advertising is "consumers' perception of the truthfulness and believability of advertising in general" (p.51). Credibility was shown to be one of the antecedents affecting attitude towards advertising (McKenzie and Lutz, 1989: Shavitt et al., 1998). Credibility of advertising is correlated with attitude towards advertising in general in the same direction. A study revealed that credibility of television advertising (TVA), in terms of purchase confidence (e.g. "One can put more trust in products seen in TVA than in those not in TVA") was low and it was one of the factors leading to the negative attitude towards TV advertising in the United States (Mittal, 1989). Pollay and Mittal's (1993) research indicated that low credibility (falsity) of the advertising affected attitude towards advertising negatively. Schlosser, et al. (1999) found that the level of perceived credibility of Internet advertising was divided. For the statement "In general, I feel I can trust advertising", 48% of the Internet users agreed with it, 31% of them disagreed and 21% of them felt neutral about it. When the users were asked about the opinions of "products that I have used usually live up to the promises of quality and performance made in their advertisements", half of the users had no opinions about the

statement, while 37% of them agreed and 12% disagreed with it. The opinion pattern of perceived credibility was similar to the attitude towards Internet advertising: both of them were divided. Approximately one third of respondents had favorable attitude, one third of them had unfavorable attitude and another one third of them held neutral attitude towards Internet advertising. Based on Ducoffe's (1996) study, it revealed that credibility had a direct influence on the attitude towards Internet advertising among student sample. Applying the same measurement of Pollay and Mittal' s (1993) study, it was found that Internet users' beliefs of advertising credibility were negatively related to the attitudes towards Internet advertising (Wolin et al., 2002).

In terms of trust in privacy and the laws of mobile advertising, Merisavo, et al. (2007) found that credibility positively influenced the acceptance of mobile advertising in Finland. A study in Greece revealed that credibility of the advertisers did not affect the attitude towards the advertisements and the purchase intention (Dross, et al., 2007). It may be due to the procedure of the experimental study. All the mobile advertisements received by the student participants were permitted in advance, so the effect of credibility of

advertisers might be moderated by the permission-based advertisement. Tsang et al. (2004) found that credibility of mobile advertising was the second important factor affecting the attitude towards mobile advertising positively, while entertainment was the most important factor contributing to the overall attitude. The fifth hypothesis of this study is:

H5: Credibility of advertising has a positive effect on the attitude towards receiving and reading mobile advertising.

3.2.6. Irritation

Zanot (1981) reviewed the survey results from 1930s to 1970s and concluded that the public's attitude towards advertising became gradually unfavorable. Most of the respondents felt being insulted their intelligence and the advertising was annoying (Mittal, 1994). Two studies revealed that irritation was one of the important belief dimensions in affecting consumers' attitude towards both traditional and Internet advertising (Ducoffe, 1995; 1996). Schlosser, et al. (1999) indicated that irritation was one of the factors leading to negative attitude towards advertising. In terms of advertising intrusiveness and irritation, a comparative study about

consumers' attitude towards unsolicited commercial email and postal direct mail advertising showed that unsolicited commercial emails were more intrusive and irritating than direct mail (Morimoto and Chang, 2006). Another research also indicated that the overall attitude towards mobile advertising was unfavorable, associated with annoying, excessive and offensive description (Lee et al., 2006). Therefore, we hypothesize that:

H6: Irritation has a negative effect on the attitude towards receiving and reading mobile advertising.

3.2.7. Ubiquity

With regard to ubiquity in particular, scholarly studies about the concept of the construct in the field of advertising are still extremely rare. The few that have been done were more technically focused in nature (DeReck, B. and Zeger, 2003; Klaasen, 2005; Kurkovsky and Harihar, 2006). Watson et al. (2002) introduced "U-commerce", next generation marketing based on a ubiquitous network. The commerce is predicted on the characteristics of network ubiquity, universality, uniqueness (personalization) and unison. Balasubramanian et al. (2002) also agreed with the ubiquitous marketing

and called it as "M-commerce' (mobile commerce). They constructed a conceptualization of the commerce in terms of space and time. With the ubiquitous technology, mobile advertising can be introduced in flexible time and flexible space, i.e. anywhere and anytime. This time critical and location sensitive advertising enable higher business information access to the receivers. Consumers can benefit from the time-sensitive and location-based advertising as they are relevant to consumers' situation (Kalakota and Robinson, 2002). However, the interviewees in the focus groups had diverse opinions on the omnipresent advertisements. A study about one of the features of ubiquitous adverting, location-based advertising, showed that people hold slightly negative attitude (mean = 3.65 with a 7-point Likert scale) about this form of advertising (Bruner II and Kumar, 2007). Another study of wireless technology capabilities of providing geographic-specific information to consumers revealed that the location-related services were viewed as invasion of privacy (Greenspan, 2002). Therefore, we hypothesize that:

H7: Ubiquity has an impact on the attitude towards receiving and reading mobile advertising.

3.2.8. Personalization

Personalization is one of the main features of mobile advertising. There are many scholar articles about personalization in marketing, but few of them focus on mobile marketing and the consumers' attitude towards mobile advertising. Personalization is "the ability to proactively tailor products and product purchasing experiences to tastes of individual consumers based upon their personal and preference information" (Chellappa and Sin, 2005: 96). In general, it means understanding different kinds of individual preferences, needs, mindsets, lifestyles, cultural and geographical differences, in order to build customer loyalty and meaningful one-to-one relationships (Riecken, 2000). In retailing service context, personalization is interpreted as a social interaction between service providers and their customers (Mittal and Lassar, 1996). Mobile users prefer the advertisements which are customized to their interests and relevant to them (Robin, 2003). Personalized messages would make people think that they are being respected (Xu, 2006). In mobile advertising context, personalization enables social interaction between advertisers and receivers by accommodating target customers' needs in accordance to their demographic profiles, preferences, shopping habits, local time and location (Rao and Minakakis,

2003; Richards and Curran, 2002; Varshney and Vetter, 2002; Yan et al., 2004). Personalized mobile advertising means sending advertising messages to mobile devices such as mobile phones through wireless network, based on customers' user demographics (e.g. income), user preference (e.g. preferred product), context (e.g. location and user activities) and content (brand names) factors (Waston, et al., 2002; Xu, 2006). According to a survey conducted with 3000 mobile phone users in Western European, the Head of Global Market Research at Nokia Networks, Reza Chady, said that consumers were more willing to accept personalized and relevant advertisements. A study with 143 respondents in mainland China found that personalization affected the attitude towards mobile advertising positively (Xu, et al., 2008). A British study showed that 81% of the 210 young respondents agreed that personalized mobile commercial messages were interesting and useful (Leek and Christodoulides, 2009). A study about web site interactivity showed that as the level of personalized messages increased, the responses from the Internet users were enhanced (Song and Zinkhan, 2008). Personalized advertising would also enhance consumer satisfaction (Rao and Minakais, 2003). This reveals that personalization

would improve the attitude towards mobile advertising. Therefore, we hypothesize that:

H8: Personalization has a positive effect on the attitude towards receiving and reading mobile advertising.

3.2.9. Permission

Different from the traditional push marketing, permission marketing allows consumers "an opportunity to volunteer to be marketed to" (Seth, 1999:43). Permission-based marketing means that consumers permit marketers to educate them on its products (Kavassalis et al., 2003). Permission-based mobile advertising can be viewed as consumers' acceptance on receiving mobile advertisements (Bamba and Barnes, 2007). Permission marketing is divided into two types, opt-in and opt-out. Opt-in involves consumers to authorize the messages being sent to them (Godin, 1999). This marketing is personalized in which the messages are related to the individual consumers directly and the message content is relevant to the consumers' interests (Seth, 1999). A British study showed that 89% of the 210 young respondents were concerned about being able to opt-in and opt-out of

receiving mobile advertisements (Leek and Christodoulides, 2009). An experimental study indicated that prior permission of email marketing campaign would favor the attitude towards the advertisers and increase thee purchase intention (DuFrene, et al., 2005). Since mobile phone is a highly personal communication tool of the user, prior permission is important for mobile advertising (Baurer, et al., 2005; Kavassalis et al., 2003). Barwise and Strong (2002) found that most of the respondents (93%) were satisfied with the permission-based services and the majority (84%) of them would recommend it to their friends. They also found that the text adverts would generate high level of readership, brand awareness (recall of the brands) and direct behavior responses. Therefore, explicit permission will generate high level of acceptance and satisfaction of the users. Cuitta (2005) pointed out that the mobile advertisers had to prevent spam when sending text adverts to cell phone users since they could determine which adverts that they would receive. The focus group interviews conducted by Caroll et al. (2007) revealed that prior permission was the most important factor affecting the acceptance of mobile advertising in New Zealand. The participant also suggested that they should have ‘opt-in’ regime before receiving mobile advertising and ‘opt-out’ regime at any stage. The study also showed that

87.8% of the total respondents expressed that it was important to give permission before receiving mobile advertisements. However, it seems that prior permission alone would not favor the attitude towards mobile advertising and raise the intention to receive advertisements. The prior opt-in permission should be updated because consumers' preference changed over time. Consumers might have signed up for many categories provided by different companies which would induce excessive emails (Wieland, 2006).

In contrast, opt-out suggests that advertisers would send advertisements to the consumers they want until the consumers request that they do not want to receive the advertisements anymore (Gordin, 1999). Different from the practices in western countries, the Hong Kong government introduced an opt-out permission-based mobile advertising. In consideration of small and medium enterprises (SEMs) operation, an "opt-out" regime is proposed whereby senders can send electronic messages to recipients, but they must provide a functional unsubscribe facility that allowing the recipients to send a request to stop receiving further electronic messages at their electronic addresses. The mobile phone users will receive mobile advertisements

unless they take the initiative to inform the Office of Telecommunications Authority (OFTA) or the advertisers for rejecting the unsolicited advertisements afterwards. The opt-out permission based advertisements may be considered as 'spam' because the users remain receiving the advertisements passively and they can only have options after receiving the advertisements. From this point of view, the opt-in mechanism is suggested to be a more effective permission-based marketing (Godin, 1998). However, some practitioners suggested opt-out regime is a better permission-based advertising for both advertisers and consumers. Compared with opt-in regime, the cost for offering opt-out marketing would be lower since the processes involved are simpler. Consumers would spend less time in making options when the permission asked for is clear and prominent (Beeler, 2000). Apart from the traditional opt-in permission, the Direct Marketing Association (DMA) suggested an opt-out regime to its member for a permission-based marketing campaign. An experimental study about opt-out email promotion from a hotel in Australia found that only 2% of the 492 who received the promotional email message with an opt-out option, responded by denying the hotel their permission to send them futher emails (Marinova, et al., 2002).

In addition, perceived risk would determine an individual's behavior (Mitchell, 1999). The risk associated with mobile marketing is the loss of privacy of mobile phone users. Rather than maximizing benefits, people will try to minimize their risk (Bauer, et al., 2005). Permission can minimize users' risk by reducing the chance of abusing their personal data and therefore improve their attitude. Tsang, et al. (2002) found that prior permission-based mobile advertisements would favor the attitude towards mobile advertising. However, if the prior-permitted advertisements are location-related, it may raise the concern about the invasion of privacy. Greenspan (2002) found that the mobile phone users expressed concerns about the privacy problems when using geographic-specific information. Opt-out regime could help relieve consumers' concerns' about their privacy disclosure (Nowak and Phelps, 1995). This means that an opt-out regime can increase consumer knowledge about privacy usage when there is no privacy control and hence reduce the risk of personal data abuse.

Online research about permission-based survey suggested that the effects of opt-in and opt-out permission depended on the types of the privacy questions and the defaults options (Bellman, et al., 2001). The online survey

asked consumers whether they wanted to opt-in or opt-out of permission marketing schemes for the intention to participating in further research, with different default options and format of questions. When the defaults option was set to 'do not participate for further contact', more respondents who selected opt-in option ('Notify me about more healthy surveys') participated in the further research (59.5%) , when compared with 44.2% of the participation rate for the respondents who selected the opt-out question ('Do not notify me about more healthy surveys'). However, when no-action defaults were set, the participation rates increased for both the opt-in and opt-out framing and the rate with opt-in question (88.5%) was higher than that of opt-out question (70.8%). The defaults of no-action in the research are similar to the situations of the mobile phone users in the context of the opt-out permission-based advertising in Hong Kong. In sum, if the respondent shows high preference of opt-in permission, it implies that most of the mobile advertisements which he or she reads are prior permitted. Similarly, if the respondent shows high preference of opt-out permission, it implies that he/she does not like most of the mobile advertisements. Therefore, we hypothesize that:

H9a: Preference of opt-in permission (prior permission) has an impact on the attitude towards receiving and reading mobile advertising.

H9b: Preference of opt-out permission (prior permission) has an impact on the attitude towards receiving and reading mobile advertising.

CHAPTER 4: METHODOLOGY

This chapter describes the research design, sampling, and data collection procedures, the instrument and the variable measured, and the statistical methods used for the data analysis.

4.1. Research design

One of the main objectives of the study is to test a model which predicts attitude and behavioral intention to receive and read mobile advertisements. The study was cross-sectional which was measured at a specific point of time. The target population for the study was mobile phone users who had received and read mobile advertisements in the past three months during a 4-week period in April 2008.

Since mobile advertising has been expended rapidly in Asia (Edwards, 2005) and China will be one of the largest markets for mobile advertising in the world with its huge population, conducting mobile advertising research in China would be an appropriate choice. There was 166.3% of mobile phone subscription penetration rate in Hong Kong, which was one of the highest

rates in the world (OFTA, 2009). In view of the above reasons, Hong Kong was selected to be the base of sampling.

4.2. Instrument

The instrument for data collection was developed based on the review on the literature about advertising. As most of the advertising research has been conducted among subjects from Western cultures, focus group interviews were conducted with 25 local mobile phone users to help design an instrument which adequately reflects the specific factors affecting their attitude and intention towards mobile advertising.

4.2.1. Focus group interview

Focus group interviews with 25 local mobile phone users were conducted during 21st to 27th May 2007. The advantage of using this qualitative method was to derive a range of ideas and perceptions and interactivity in the group discussions provided a richer understanding of the researcher problems. The interviews could generate new propositions that were tested in the pre-test survey questionnaires.

The participants were divided into three groups according to their characteristics: age, education and income level. All the participants had received mobile advertisements in the past three months. Group 1 comprised nine undergraduate students aged between 19 -21. Five of them were male and four of them were female. One of them used 3G network and the remaining participants used 2G network. Group 2 comprised six participants (3 male and 3 female) with at least 2 year working experience and college education level. Two of them used 3G network. Group 3 comprised 10 postgraduate students. Three of them used 3G network. There were one male and the remaining were female students. All of them had received and read mobile advertisements in the past three months. Each focus group interview lasted for one hour. The interviews were based on open-ended questions and triggers. Audio recording was used to record the focus group discussions, with additional notes taken by the facilitator.

Major content of the discussion

The content of the interviews was analyzed and the results were used to complement the review of the literature on advertising. Most of the participants received 1-6 advertisements in average and some of them

received more than 20 advertisements per month in average. However, none of the advertisements had gained their approval in advance. The content of the advertisements were about ringtones and wallpapers downloading, banking, insurance, computer, promotion from shops, lucky draw, etc.

Many of the participants felt that the advertisements were “annoying” and “deceptive”: “It is annoying when I receive the advertisements at work or even sleeping”, “I hate those unrelated advertisements”, “I don’t trust the mobile advertisements”, “I feel that the advertisements were deceptive”.

For the mobile advertisements which they would prefer, their answers are as follows: “I would prefer those advertisements which are related to me”, “I like those advertisements which provide me useful information or incentives”, “I like interesting advertisements”, “I like the advertisements provide me information when I want to”, “I would prefer those advertisements which have been approved by me in advance so that I can control what advertisements I will receive”, etc.

The participants’ attitudes towards mobile advertising were diverted. “In general, I don’t like any advertising, including mobile advertising at all”, “I

don't like or dislike mobile advertising", "Some of them are good but some of them are annoying", "I like mobile advertising as they help me kill time when I am bored", etc. Similarly, their intentions to receive and read mobile advertising were divided: "Yes, I'll", "It depends…", "No, I will delete them when I get them right away".

Implications of the focus group findings

Almost all of the participants had more positive attitudes towards traditional advertising than the Internet and mobile advertising. The main reason was that the traditional advertising was perceived as more informative, entertaining, reliable and less annoying, especially for TV and magazine advertisements. The participants did not believe the Internet advertising and perceived that there was a high risk of being attacked by virus when they clicked to read the banner, pop-up advertisements and spam emails. Most of the Internet advertising like spam emails was not relevant to them because most of them came from overseas. However, if the Internet advertising was advertised by local companies with familiar brands, they would read the advertisements. It seems that their attitude towards mobile advertising was less negative than that of the Internet advertising because the risk of being

attacked by virus was much lower when they received mobile advertising. The participants agreed that the SMS advertisements were not entertaining because there was only text with limited information provided. They suggested that it would be much better if pictures of the products were shown in the advertisements because the pictures would provide more information of the advertised products. The participants in Group 2 and 3 felt that mobile advertising was annoying sometimes when they were busy at work or study. The results revealed that entertainment, informativeness, irritation and credibility would be the main beliefs affecting consumers' attitude towards mobile advertising.

It seems that prior permission alone would not favor the attitude towards mobile advertising and raise the intention to receive advertisements. The prior opt-in permission should be updated because consumers' preferences changed over time. Consumers might have signed up for many categories provided by different companies which would induce excessive emails (Wieland, 2006). Also, incentives provided would favor their attitude and intention. The participants believed that the opt-out permission regime did not work. The opt-out option was often shown at the end of the

advertisements but many of the participants only read the first few lines of the advertisements so they might not notice that there was an opt-out option. They would just ignore or delete the advertisements that they were not interested when the advertisements were delivered to their mobile phones again.

Although most of the participants held less favorable attitude towards mobile advertising and low intention to receive and read the advertisement, almost all the female participants were interested in the mobile advertising with discount offer information. For instance, they preferred location-based advertising sent by the mobile network providers which informed the users the latest discount offer and coupon of the shops nearby. Male participants considered mobile advertising was annoying and they were not interested in any kind of mobile advertising, except those relevant to their work and interests. In addition, the female tended to perceive brand as the indicator to read the advertisement while the male participants disagreed with it.

4.2.2. Survey questionnaire

For the constructs to be operationally specific, the constructs must be defined in terms of measurement (Bacharach, 1989). Therefore, measurement in relevant literature will be adopted to achieve the operationalization of the constructs in the proposed model. Since there is little explicit measurement can be followed in mobile advertising literature (except Xu (2007)'s measurement on personalization), Brackett and Carr (2001)'s and Ducoffe (1995;1996)'s measurements were adopted and further modification was made. In addition, the findings from the focus group interviews also facilitate the additional content of the questionnaire.

The questionnaire was developed in English, but as target respondents were local Chinese mobile phone users, it was translated into Chinese by adopting back translation procedure as described by Brislin (1976). A bilingual translator first translated the English questionnaire into Chinese, and then another bilingual translator translated the Chinese version back to English. Some of the wording in Chinese was modified to ensure that it correctly reflected the meaning of the English version.

The questionnaire comprised eight main sections (refer to Appendix 2). The first section identified whether the mobile phone users were qualified to respond to the questionnaire. They were asked whether they had received and read mobile advertisements in the past three months. If their answer was 'no', then they were asked to answer the second section.

The second section was to identify the reasons which they did not read mobile advertisements. If the respondents' answer was 'yes' in the first section, the second section was skipped and they were asked to reply the third and following sections.

The third section collected information about mobile phone users' experience in receiving, reading and using a SMS or MMS as communication tool, the number of the mobile advertisements they read, as well as the number of prior permitted advertisements. The variables were categorized instead of continuous because the pilot tests results showed that the answers from the respondents were closer to reality. When continuous variables were used in the open-ended questions, there were memory errors and respondents were not serious in answering the questions.

The fourth section comprised 25 items to measure the beliefs that mobile phone users held toward mobile advertising. The respondents were asked to rate on a seven-point Likert-type scale (where 1= Strongly Disagree and 7= Strongly Agree).

The fifth section collected data about the importance of subjective norm or social pressure, on the decision of the respondents to receive and read mobile advertisements. The subjective norm was measured with the statements "Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) think I should read mobile ads", "Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be wise" and "Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be useful". A seven-point Likert-type scale (1= Strongly Disagree and 7= Strongly Agree) was used.

The sixth section collected data about the attitude of the respondents toward mobile advertising. The attitude was measured by the statements "I think mobile advertising is good", "I like to receive and read mobile

advertisements" and "My attitude towards mobile advertising is positive". A seven-point Likert-type scale (where 1= Strongly Disagree and 7= Strongly Agree) was employed.

The seventh section measured the respondents' behavioral intention in receiving and reading mobile advertisements in future. It was measured by the statements: "I will consider reading mobile advertisements" and "I will receive and read mobile advertisements in future". A seven-point Likert-type scale (1= Strongly Disagree and 7= Strongly Agree) was used.

The last section collected information about the demographic characteristics of the respondents, including gender, age, education and monthly income.

4.2.3. Pilot tests

Pilot test 1

The first pilot test was conducted during the model development stage, so only part of the instrument was pilot tested. The test was conducted with 77 conveniently selected respondents at two university campuses: Hong Kong

University (HKU) and Hong Kong Polytechnic University (PolyU) to examine the reliability of the questionnaire.

Thirty-three useful questionnaires were collected from HKU and forty-four of them were collected from PolyU. It was found that the attitude and intention among the students in two universities were at a similar level. The mean score of the attitude of HKU students was 3.26 and that of PolyU student was 3.25. The mean score of the intention of HKU students was 3.58 and that of PolyU student was 3.28. The reliability of the scales was tested by calculating their coefficient alphas (Cronbach's alphas) to determine the degree of internal consistency between the multiple measurements. It is recommended that the Cronbach's alpha should meet significance of 0.70 (Nunnally and Berstein, 1994). Table 4.1 gives a summary of the reliability of the different construct in the instrument. The Cornbach's alphas of the different constructs range from 0.543 to 0.931, with the 'entertainment', 'credibility' and 'irritation' dimensions failing to meet the 0.70 level. The low reliability of the three dimensions may be due to the small sample size. The measurement was modified and it was tested in pilot test 2 with other new constructs.

Table 4.1 Reliability of the dimensions measured with the instrument in pilot test 1

Dimension	Cronbach's alpha
Informativeness	0.866
Mobile advertising (in forms of SMS or MMS) is a good source of product or service information.	
Mobile advertising supplies relevant product or service information.	
Mobile advertising provides timely information of a product or service.	
Mobile advertising is a convenient source of information.	
Entertainment	0.622
Mobile advertising is entertaining.	
Mobile advertising is enjoyable.	
Mobile advertising is boring.	
Credibility	0.543
Mobile advertising is reliable.	
Mobile advertising is deceptive.	
Mobile advertising provides accurate information.	
Irritation	0.573
Mobile advertising insults people's intelligence.	
Mobile advertising is annoying.	
Mobile advertising is irritating.	
Attitude	0.891
In general, I think mobile advertising is good.	
In general, I like to receive and read mobile advertisements.	
In general, my attitude towards mobile advertising is positive.	

Dimension	Cronbach's alpha
Intention	0.931
I will consider reading mobile advertisements.	
I will receive and read mobile advertisements in future.	

Pilot test 2

The instrument was pilot tested with 175 convenient selected university students at PolyU. An item "Mobile advertising is a convenient source of information" was deleted for obtaining a higher Cronbach's alpha. An additional item "My intention to receive and read mobile ads is high" was made to obtain higher reliability and validity. In view of the low Cronbach's alpha of the three dimensions in pilot test 1, some amendments were made in the measurement. An 'entertainment' item "Mobile advertising is boring" was deleted and changed into a new item "Mobile advertising is interesting". In the 'credibility' dimension, two items "Mobile advertising is deceptive" and "Mobile advertising provides accurate information" were changed into "Mobile advertising is trustworthy" and "Mobile advertising is believable". In the 'irritation' dimension, an item "Mobile advertising insults people's intelligence" was amended as "Mobile advertising is vexing". A new construct 'location-based advertising' was added in pilot test 2. Table 4.2 gives a summary of the reliability of the different constructs in the

instrument. The Cornbach's alphas of the different constructs range from 0.659 to 0.880, with the construct of irritation nearly reached the level of 0.70.

Table 4.2 Reliability of the dimensions measured with the instrument in pilot test 2

Dimension	Cronbach's alpha
Informativeness	0.725
Mobile advertising is a good source of product or service information.	
Mobile advertising supplies relevant product or service information.	
Mobile advertising provides timely information of a product or service.	
Entertainment	0.829
Mobile advertising is interesting.	
Mobile advertising is enjoyable.	
Mobile advertising is entertaining.	
Credibility	0.829
Mobile advertising is reliable.	
Mobile advertising is trustworthy.	
Mobile advertising is believable.	
Irritation	0.659
Mobile advertising is vexing.	
Mobile advertising is annoying.	
Mobile advertising is irritating.	

Dimension	Cronbach's alpha
Location-based ad.	0.769
In general, location-based advertising* provides timely information.	
In general, location-based advertising is interesting.	
In general, location-based advertising is believable.	
In general, location-based advertising is irritating.	
Opt-in permission	0.859
Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is good.	
Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is important.	
I like to select mobile ads (e.g. entertainment, finance, news) in advance.	
Opt-out permission	0.880
Having chance to select whether I will continue receiving similar mobile ad after reading the ad is good.	
Having chance to select whether I will continue receiving similar mobile ad after reading the ad is important.	
I like to select whether I will continue receiving similar mobile ad after reading the ad.	
Subjective norm	0.759
Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) think I should read mobile ads.	
Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be wise.	
Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be useful.	

* Example: If you are in Monkok, your mobile phone will receive a commercial message related to Langham Place e.g. discount offer provided by the shops in the plaza.

Dimension	Cronbach's alpha
Attitude	0.780
In general, I think mobile advertising is good.	
In general, I like to receive and read mobile advertisements.	
In general, my attitude towards mobile advertising is positive.	
Intention	0.801
I will consider reading mobile advertisements.	
I will receive and read mobile advertisements in future.	
My intention to receive and read mobile ads is high.	

The finalized measurement scale is shown in the Appendix 2 (questionnaire). Location-based advertising was replaced by personalization and ubiquity after justification.

4.2.4. Sampling

Population

The target population for the study was mobile phone users in Hong Kong. A total of six locations were selected for conducting the interviews. Two spots were chosen in each district: the New Territories, Kowloon and Hong Kong Island.

Sample size

The minimum sample size which was suitable for multivariate data analysis are 10 times as large as the number of variables in the study (Hair et al., 2006). Another suggestion is that 15 times to one variable (Stevens, 1996). There are a total of 38 variables in the proposed model, it was estimated that the sample size would be 570. When the model is very complicated with many constructs or the data are incomplete or, it is recommended that researcher should go beyond the minimum sample size guide (Hair, et al., 2006). It was also estimated that 40% of the target respondents might not be willing to participate due to the fact that the questionnaire was relatively lengthy. It was estimated that 741 (570 x 140% = 741) mobile phone users would need to be approached to achieve the required sample size.

Sampling approach

Probability sampling method was used wherever possible for collecting data. Total six locations were selected for data collection. These locations include Causeway Bay, Central, Tsim Sha Tsui, Monkok, Shatin and Tsuen Wan. These locations are among densely populated areas in Hong Kong. It was intended to collect 123 responses from each of the six locations.

Data collection

The actual data collection was performed by the researcher and 6 local college students who were recruited for the purpose of collecting data. Training was provided by the researcher to all the helpers in interview techniques and sampling procedures before the commencement of the actual data collection. The questionnaire was administered by the interviewers in Cantonese or English, depending on the language preference of the respondents.

A systematic sampling method was employed, with a time interval of 20 minutes. However, this sampling method did not work in some places or within some period of time like park areas or office hours as only few people passed by the interviewees in a period of time. Therefore, convenience sampling was used in this situation. The interview was conducted in one-by-one approach. A HK$10 coupon was given to the respondents who had finished the whole questionnaire. Once the person agreed to participate, the interviewer read the questionnaire questions to the respondents. The survey had been conducted from afternoon till evening every day during the four-week data collection period.

During the 4-week period, a total of 1086 mobile phone users were approached, 305 of whom were not willing to participate. The incomplete questionnaires were discarded, leaving 781 useable questionnaires for the analysis.

4.3. Data analysis

4.3.1. Descriptive statistics

Descriptive statistics were used to determine the mean and standard deviation scores of the belief dimensions, subjective norm, attitude and intention. It is also used to analyze the demographic characteristics, experience (in years) in using SMS or MMS as a communication tool, receiving and reading mobile advertisements and the number of prior permitted advertisements.

4.3.2. Exploratory factor analysis

Exploratory factor analysis (EFA) was employed to test the construct validity of the measurement scales. Principle component analysis with Varimax rotation was used. The Bartlett test of sphericity was employed to

indicate the statistical probability that the correlation matrix has significant correlations among some of the variables (Hair, et al., 2006). The Kaiser-Meyer-Olin measure of sampling adequacy (MSA) was also employed to determine the appropriateness of the EFA. The MSA measures the sampling adequacy based, where a value of 0.80 or above is meritorious; 0.70 and 0.79 is middling; between 0.60 and 0.69 is mediocre; between 0.50 and 0.59 is miserable; and below 0.50 is unacceptable (Hair, et al., 2006). The number of factors to be extracted mainly depended on eigenvalues of one or above. It is recommended that factor loadings of greater than ±0.30 meet the minimum level; loadings of ±0.40 indicate the variable is more important; and loadings of ±0.50 or above indicate the variable is practically significant (Hair, et al., 2006). The internal consistency of each scale is determined by the Cronbach's alpha coefficient.

4.3.3. Multiple regression analysis

Multiple regression analysis was used to analyze the relationship between the dependent variables (attitude and/or intention) and independent variables (belief dimensions or attitude, subjective norm and control variables).

Coefficient of determination (R^2) measures the proportion of the variance of the dependent variable of its mean which is explained by the independent variables. The coefficient should be between 0 and 1. It is assumed that the higher the value of R^2, the greater the exploratory power of the regression equation.

When B_x represents regression coefficient, X_1 represents informativeness, X_2 represents entertainment, X_3 represents credibility, X_4 represents irritation, X_5 represents ubiquity, X_6 represents personalization, X_7 represents opt-in permission, X_8 represents opt-out permission, X_9 represents control variables, AT represents attitude, SN represents subjective norm and Y_0 represents intention, the equation of the regression will be:

$$Y_0 = A_0 + B_1 X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7X_7 + B_8X_8 + B_9X_9 + B_{10}SN + B_{11}AT$$

4.3.4. Structural equation modeling

Structural equation modeling (SEM) was used to test the proposed model. It was selected as one of the analysis method since it can deal with multiple

relationships simultaneously and assess the relationships comprehensively (Hair, et al., 2006).

Confirmatory factor analysis (CFA) was used to confirm the factor structure of the belief-attitude-intention model. The 34 items were divided into 11 dimensions. The CFA procedure examined the model's goodness of fit, the magnitude of the individual relationships and the hypothesized paths. Apart from chi-square statistics, other measures indicate the fit adequacy, including goodness of fix index (GFI), adjusted goodness of fit index (AGFI), normed fir index (NFI), comparative fit index (CFI), standardized root mean square (SRMR), root mean square error of approximation (RMSEA) and normed chi-square (χ^2/df) (Hair, et al., 2006). The suggested acceptance of a measurement fit is shown in Table 4.3. The fit guidelines were also used to assess the validity of the proposed model by examining the goodness-of-fit and significance, direction and size of structural parameter estimates (Hair, et al., 2006).

Table 4.3 Guideline for measurement fit

Measurement fit	Fit guideline
GFI	≥0.90
RMSEA	<0.07
RMR	≤0.08
SRMR	<0.05
NFI	≥0.90
CFI	≥0.90
AGFI	≥0.80
χ^2/df	1-3
χ^2 and its p-value	p > 0.05

4.3.5. Independent-Sample T Test and ANOVA F Test

Independent-sample T Test and ANOVA F Test were employed to compare the mean scores of the belief dimensions, attitude, subjective norm and intention for mobile phone users with different demographic characteristics.

CHAPTER 5: FINDINGS

This chapter presents the findings of the study and consists of four main sections. The first section presents the results and a brief discussion of the demographic characteristics of the respondents. The second section reports reliability and validity testing of the questionnaire. The third section presents the results of the multiple regression analysis, Independent-Sample T Test, ANOVA F Test and SEM analysis.

5.1. Descriptive statistics

The survey was conducted in April 2008 at three main regions (Hong Kong Island, Kowloon and the New Territories) in Hong Kong. Seven hundred and eighty-one useful questionnaires were collected at a response rate of 61%. Out of the 781 respondents, 670 had received and read mobile advertisements in previous three months. The remaining 111 people did not receive or read mobile advertising (the descriptive data analysis will be presented in the 5.1.3 section). The 670 respondents are the main data for the analysis in this study.

5.1.1. Respondents who had received and read mobile advertisements

The survey showed that 94.9% of the 670 respondents had received mobile advertisements for at least 1-3 years and 90.6% of them had used SMS or MMS as a communication tool. Most of the respondents read 1-3 mobile advertisements (39%) per month in average and 24.9% of them read 4-6 mobile advertisements per month in average. However, majority of them (86.7%) agreed that none of the advertisements had gained their permission before sending to their mobile phones.

Table 5.1 shows the descriptive statistics of the 670 respondents who had received and read mobile advertisements. Female respondents (51.2%) are slightly more than male respondents (48.8%). The latest Hong Kong population statistics reports that the percentages of female and male population are 52.5 and 47.5 respectively.

Around 82% of the respondents aged 15-35 and 18% aged 36-65. Excluding the age groups under 15 and 65 or over, there were 81.6 % and 18.4% of the general population who fell into an age range of 15-34 and 35-64 respectively. The majority of the respondents fell into an age range of 18-24

(42.6%) and it was followed by the age group of 25-30 (28%) and 31-35 (11.0%).

It seems that the age group distribution of sample data does not match the distribution of the general population. However, same as the sample data, the general population mainly fell into the age groups of 15-34 (28.5%) and 35-64 (45.6%) respectively in 2007. Moreover, the age distribution of frequent SMS users is different from that of the general population. A number of investigations in Western countries showed that besides the age group under 18, age group of 18-24 used text messages most frequently and the age group has the highest rate of participation in mobile marketing efforts. (e.g. Graham, 2001; Ling and Telenor R&D, 2002; Mobile Marketing Association, 2008). Almost 80% of 18-24 years olds used SMS and sent at least one SMS per day and 31% sent at least five a day in the United Kingdom (Barwise and Strong, 2002). Therefore, the sample can represent the mobile phone users sending and receiving SMS.

In terms of education level, the vast majority of the respondents in this study attained college or university (47.1%) and high school or below (40.1%).

Almost 13% of them received post-graduate education. In the official statistics, the general population attaining high school or below accounted for 75.8% and those attaining post-secondary level (including college, university and post-graduate levels) accounted for 24.2%. The difference may be caused by the fact that convenience sampling was used in some occasions and more mobile phone users with higher education levels were willing to participate in the interviews. In spite of the difference, majority of the education attainments of respondents were below post-graduate level. In other words, the survey data is basically representative and generalized.

Around 40% of the respondents' income was below HK$10,000, 37.3% was between HK$10,000 and HK$19,999, 12.8% was between HK$20,000 and HK$29,999 and 4.3% was above HK$30,000. The latest census statistics showed that there were 49.2% of Hong Kong people received less than HK$10,000 individual monthly salary, 29.1% received income between HK$10,000 and HK$19,999, 10.4% received income of HK$20,000 to HK$29,999 and 11.3% received income over HK$30,000. The percentage differences of all the four income groups between the survey data and

official statistics are within 10%. The general pattern of income distribution in the survey can represent the general population.

There are three main regions in Hong Kong, they are Hong Kong Island, Kowloon and the New Territories. Most respondents came from Kowloon and the least were from the New Territories. The official statistics revealed that population density was the highest in Kowloon and lowest in the New Territories. We can conclude that the survey data can represent the general population in Hong Kong.

Table 5.1 Overall demographic profile of the 670 respondents

Characteristics	Frequency	Percentage
Gender		
Male	381	48.8
Female	401	51.2
Total	781	100.0
Age		
Under 18 (16-17)	22	2.8
18-24	323	41.4
25-30	212	27.1
31-35	83	10.6
36-40	55	7.0
41-50	52	6.7
51-60	32	4.1
61 or above	2	0.3
Total	781	100.0
Education		
High school or below	313	40.1
College / university	368	47.1
Postgraduate	100	12.8
Total	781	100.0
Income		
Under HK$10,000	356	45.6
HK10,000- HK$19,999	291	37.3
HK$20,000- HK$29,999	100	12.8
HK$30,000 or above	27	4.3
Total	781	100.0
Region		
Hong Kong Island	284	36.3
Kowloon	297	38.0
The New Territories	200	25.7
Total	781	100.0

5.1.2. Descriptive findings of Attitude, Intention and other independent variables

7-point Likert scale was employed in the questionnaire, from 1 (totally disagree) to 7 (totally agree). Of the eleven variables, opt-in permission had the highest rating (mean = 5.46 out of 7), followed by irritation (mean = 4.98), opt-out permission (mean = 4.49), informativeness (mean = 3.71), attitude (mean = 3.21), credibility (mean = 3.19), intention (mean = 3.13), personalization (mean = 3.08), entertainment (mean = 2.94), subjective norm (mean = 2.90) and ubiquity (mean = 2.20). The standard deviations of the scores are between 1.10 to 1.60 which imply there are sufficient variations in the responses. The results show that respondents' general attitude towards mobile advertising and intention towards receiving mobile advertisements are low. Majority of them (86.7%) agreed that none of the advertisements had gained their permission before sending to their mobile phones. It would be one of the reasons for the ratings of permission and irritation. Moreover, the respondents generally agreed both opt-out and opt-in permission were good and important, and they preferred opt-in permission (mean= 5.46) to opt-out permission (mean=4.49). It implies that the existing Unsolicited Electronic Messages Ordinance may not be

perceived as a better solution for the unsolicited mobile advertisements. The study had a low mean score of 2.20 on the ubiquity scale. A similar study also revealed a low mean score (mean = 3.65 with 7 point-scale) on the attitude towards location-based advertising (Bruner II and Kumar, 2007). The low score reflects public's negative feeling towards receiving ubiquitous advertising.

Table 5.2 Mean score and standard deviation of all the variables

Variables	Mean score (measured on a scale of 1 to 7)	Standard Deviation
Informativeness	3.71	1.25
Entertainment	2.94	1.20
Credibility	3.19	1.15
Irritation	4.98	1.19
Ubiquity	2.20	1.15
Personalization	3.08	1.29
Opt-in Permission	5.46	1.29
Opt-out Permission	4.49	1.57
Subjective Norm	2.90	1.17
Attitude	3.21	1.15
Intention	3.13	1.31

5.1.3. Descriptive statistics of the respondents who had not received and read mobile advertising

Out of the 781 respondents, 111 (14.2%) of them did not receive or read mobile advertisements in the past three months. Among the 111 respondents, 34 (4.4%) of them did not receive mobile advertisements and 77 (69.4%) of them did not read mobile advertisements. The demographic data of the 77 respondents is presented in Table 5.3. The general demographic profile of these samples was not the same as that of the 781 samples. The proportion of male (47.4%) to female (52.6%) in this data set was similar to that in the data set of the 781 respondents shown in Table 5.1 (male (48.8%) : female (51.2%)). However, the age characteristic distribution of this data set was different. Majority of the age groups in the 77 samples were 25-30 (33.8%) and 31-35 (33.8%) but the majority age group was 18-24 (41.4%) in the 781 samples. For education level, the proportion of high school or below to college/university to postgraduate in this data set was 35.1%: 57.1%: 7.8% when compared to that in another data set (40.1%: 47.1%: 12.8%) shown in Table 5.1. For income level, most of the respondents (42.9%) in this data set fell into the group of HK$10,000 – HK$ 19,999 but majority of them (45.6%) fell into the category of below HK$10,000. The profile of this data

set was different from that of another data in the age and income items but similar in the gender and education characteristics.

They were asked for the reasons of not reading mobile advertisements. They could indicate more than one reason in this question. Majority of them (35 respondents) did not read mobile advertisements because they did not like mobile advertising and 13 of them did not like all forms of advertising. Other reasons are as follows: “There are too many advertising (13%), “The mobile advertisements are not permitted by me in advance” (11.7%), “I feel that the mobile advertising is irritating” (9.1%), “I am busy at work or class when I receive the mobile advertisements” (9.1%), “The mobile advertisements do not provide me any incentives” (6.5%), “The mobile advertisements are not relevant to me” (6.5%), “The mobile advertisements are not useful” (5.2%), “The mobile advertisements are not credible” (3.9%), “I am not interested in the mobile advertisements” (2.6%) and “Reading the mobile advertisements wastes my time” (1.3%).

Table 5.3 Overall demographic profile of the 77 respondents who had not read mobile advertisements

Characteristics	Frequency	Percentage
Gender		
Male	37	47.4
Female	41	52.6
Total	77	100.0
Age		
Under 18 (16-17)	0	0.0
18-24	3	3.9
25-30	26	33.8
31-35	26	33.8
36-40	5	6.5
41-50	8	10.4
51-60	7	9.1
61 or above	2	2.5
Total	77	100.0
Education		
High school or below	27	35.1
College / university	44	57.1
Postgraduate	6	7.8
Total	77	100.0
Income		
Under HK$10,000	30	39.0
HK10,000- HK$19,999	33	42.9
HK$20,000- HK$29,999	13	16.9
HK$30,000 or above	1	1.2
Total	77	100.0

5.2. Reliability and validity testing

5.2.1. Reliability testing

Cronbach's alpha (α) scale is used to test the reliability of the measurement scales. It is generally agreed that Cronbach's alpha of 0.70 is the lower limit for testing reliability (Hair, et al., 2006). The alpha values of all the items are over 0.70. Therefore, the measure items of the questionnaire are reliable.

Table 5.4. Cronbach's alpha (α) of the questionnaire

Questions	Variables	Measure items	α value
Q6	Opt-in permission	Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is good.	0.88
Q7		Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is important.	
Q8		I like to select mobile ads (e.g. entertainment, finance, news) in advance.	
Q9	Opt-out permission	Having chance to select whether I will continue receiving similar mobile ad after reading the ad is good.	0.92
Q10		Having chance to select whether I will continue receiving similar mobile ad after reading the ad is important.	
Q11		I like to select whether I will continue receiving similar mobile ad after reading the ad.	

Questions	Variables	Measure items	α value
Q12	Personalization	Contents in mobile advertising are personalized.	0.88
Q13		Mobile advertising displays personalized message to me.	
Q14		Mobile advertising is available for my preference.	
Q15	Ubiquity	Mobile advertising appears at right timing.	0.83
Q16		Mobile advertising appears at right location.	
Q19	Informativeness	Mobile advertising is a good source of product or service information.	0.72
Q20		Mobile advertising supplies relevant product or service information.	
Q21		Mobile advertising provides timely information.	
Q22	Entertainment	Mobile advertising is interesting.	0.93
Q23		Mobile advertising is enjoyable.	
Q24		Mobile advertising is entertaining.	
Q25	Credibility	Mobile advertising is reliable.	0.92
Q26		Mobile advertising is trustworthy.	
Q27		Mobile advertising is believable.	
Q28	Irritation	Mobile advertising is vexing.	0.88
Q29		Mobile advertising is annoying.	
Q30		Mobile advertising is irritating.	
Q31	Subjective norm	Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) think I should read mobile ads.	0.89

Questions	Variables	Measure items	α value
Q32	Subjective norm	Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be wise.	
Q33		Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be useful.	
Q34	Attitude towards mobile advertising	I think mobile advertising is good.	0.86
Q35		I like to receive and read mobile advertisements.	
Q36		My attitude towards mobile advertising is positive.	
Q37	Intention of receiving and reading mobile advertising	My intention to receive and read mobile ads is high.	0.91
Q38		I will consider reading mobile ads.	
Q39		I will receive and read mobile advertisements in future.	

5.2.2. Validity testing

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to test the validity of the measure items. For EFA, principal component analysis with Varimax rotation was used to extract factors. The KMO-MSA and the Bartlett's test of sphericity were employed to determine whether sufficient correlations existed among variables. Barlett's test of sphericity should be statistically significant with $p < 0.05$, and the

KMO-MSA should have an index of between 0 and 1, with an index over 0.5 signifying that each variable is perfectly predicted with no error by the other variables. As shown in Table 5.5., both the KMO-MSA and Bartlett's test of sphericity indicated that the data were appropriate for factor analysis.

Table 5.5 KMO-MSA and Barlett's test of sphericity (with all attributes)

		With all attributes
KMO-MSA		0.892
Bartlett's test of sphericity		
	Approx. Chi-Square	17052.65
	df	561
	Sig.	0.000

Factor loadings in range of ±0.30 to ±0.40 are minimal acceptable level, factor loadings ±0.50 or greater are considered practically significant and loadings exceeding ±0.70 are considered indicative of well-defined structure (Hair et al., 2006). According to the guideline, loadings below 0.3 were suppressed in the matrix table for visual purpose.

The initial EFA showed that nine factors were extracted and 'attitude' and 'intention' were collapsed into one factor. TRA model suggests that attitude

is one of the main factors affecting intention and therefore the two scales should be highly correlated. The questionnaires items of both constructs were adopted from literature. The meaning of the measure items of both constructs was clearly stated and different from each other. Therefore, the validity of attitude and intention can be accepted. The six attributes of 'attitude' and 'intention' was thus deleted in the second run. Two of the four attributes of 'ubiquity' were deleted in third run. The four attributes of ubiquity were separated into two factors (ubiquity_right and ubiquity_any) in the first two factor analyses. The Cronbach's alpha value improved from 0.71 to 0.83 when the last two attributes (ubiquity_any) were deleted. The two items were deleted as the meaning carried in the items (ubiquity_any) seems varied from the concept of belief and different from that of another two items (ubiquity_right). The results of the KMO-MSA and Bartlett's test of sphericity in Table 5.6 showed the revised dataset remain to be appropriate for factor analysis.

Table 5.6 KMO-MSA and Bartlett's test of sphericity (with items deleted)

		2nd run ("attitude" & "intention" deleted)	3rd run (two attributes of "ubiquity" deleted)
KMO-MSA		0.872	0.845
Bartlett's test of sphericity			
	Approx. Chi-Square	14703.30	12295.594
	df	465	325
	Sig.	0.000	0.000

Ultimately, nine factors with 26 attributes were identified (refer to Tables 5.7 and 5.8). The nine factors, which included 'opt-in permission', 'opt-out-permission', 'personalization', 'ubiquity', 'informativeness', 'entertainment', 'credibility' , 'irritation' and 'subjective norm', explained 82.41% of the total variance. It is deemed to be acceptable for most social science research.

The factor "ubiquity" obtained Eigen value below one may be because of the number of the items in the factor. The four items were reduced to two items in the third run according to the results of the second EFA test. The reliability coefficient of 'ubiquity' had improved (α=0.83) so the factor can be acceptable in exploratory research after deleting two items (Hair, et al., 2006; Nunnally and Berstein, 1994).

Table 5.7 Rotated factor loading matrix

Items	Components								
	1	2	3	4	5	6	7	8	9
Q19- Informativeness 1								0.610	
Q20- Informativeness 2								0.751	
Q21- Informativeness 3								0.781	
Q22- Entertainment 1						0.785			
Q23- Entertainment 2						0.821			
Q24- Entertainment 3						0.811			
Q25- Credibility 1	0.879								
Q26- Credibility 2	0.903								
Q27- Credibility 3	0.869								
Q28- Irritation 1					0.824				
Q29- Irritation 2					0.880				
Q30- Irritation 3					0.835				
Q15- Ubiquity 1									0.836
Q16- Ubiquity 2									0.869
Q12- Personalization 1							0.897		
Q13- Personalization 2							0.715		
Q14- Personalization 3							0.336		
Q9-Optout permission 1		0.901							
Q10-Optout permission 2		0.916							
Q11-Optout permission 3		0.892							
Q6-Optin permission 1				0.892					
Q7-Optin permission 2				0.889					
Q8-Optin permission 3				0.882					
Q32- Subjective norm 1			0.862						
Q33- Subjective norm 2			0.865						
Q34- Subjective norm 3			0.846						

Table 5.8 Final factor analysis results

	Eigen value	Variance Explained (%)	Factor Loading
Factor 1: Credibility	**7.691**	**29.580**	
Q25- Mobile advertising is reliable.			0.879
Q26- Mobile advertising is trustworthy.			0.903
Q27- Mobile advertising is believable.			0.869
Factor 2: Opt-out Permission	**3.109**	**11.960**	
Q9- Having chance to select whether I will continue receiving similar mobile ad after reading the ad is good.			0.901
Q10- Having chance to select whether I will continue receiving similar mobile ad after reading the ad is important.			0.916
Q11- I like to select whether I will continue receiving similar mobile ad after reading the ad.			0.892
Factor 3: Subjective Norm	**2.459**	**9.456**	
Q32- Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) think I should read mobile ads.			0.862
Q33-Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be wise.			0.865

	Eigen value	Variance Explained (%)	Factor Loading
Q34- Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be useful.			0.846
Factor 4: Opt-in Permission	**2.220**	**8.540**	
Q6- Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is good.			0.892
Q7-Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is important.			0.889
Q8- I like to select mobile ads (e.g. entertainment, finance, news) in advance.			0.882
Factor 5: Irritation	**1.575**	**6.056**	
Q28- Mobile advertising is vexing.			0.824
Q29- Mobile advertising is annoying.			0.880
Q30- Mobile advertising is irritating.			0.835
Factor 6: Entertainment	**1.3345**	**5.175**	
Q22- Mobile advertising is interesting.			0.785
Q23- Mobile advertising is enjoyable.			0.821
Q24- Mobile advertising is entertaining.			0.811

	Eigen value	Variance Explained (%)	Factor Loading
Factor 7: Personalization	**1.224**	**4.707**	
Q12- Contents in mobile advertising are personalized.			0.897
Q13- Mobile advertising displays personalized message to me.			0.715
Q14- Mobile advertising is available for my preference.			0.336
Factor 8: Informativeness	**0.923**	**3.550**	
Q19- Mobile advertising is a good source of product or service information.			0.610
Q20- Mobile advertising supplies relevant product or service information.			0.751
Q21- Mobile advertising provides timely information.			0.781
Factor 9: Ubiquity	**0.842**	**3.240**	
Q15-Mobile advertising appears at right timing.			0.836
Q16-Mobile advertising appears at right location.			0.869

5.3. Data analysis

This study employed multiple regression modeling and structural equation modeling to analyze the data. The results derived from both analysis methods were consistent which can strengthen the validity of the findings.

5.3.1 Multiple Regression Analysis

Attitude, subjective norm (independent variables) and intention (dependent variable)

Multiple regression analysis was used to test the following hypothesis:

H1: Attitude towards reading and receiving mobile advertising will lead to the behavioral intention to receive and read mobile advertisement.

H2: The more positive the subjective norm, the higher the behavioral intention to receive and read mobile advertising.

The results supported the two hypotheses: Attitude (AT) and subjective norm (SN) accounted for 79% of the variance in intention towards mobile advertising (MI). Table 5.9 presents these data. The influence of attitude is much stronger than that of subjective norm as reflected by the β values.

Table 5.9 Multiple regression analysis summary for attitude predicting intention

Variable	B	Std. Error	Std. Coefficient (β)
Attitude towards mobile advertising (AT)	0.826	0.030	0.722***
Subjective Norm (SN)	0.145	0.030	0.130***

Note: Adjusted R^2=0.79, p< 0.001
***p< 0.001, ** p<0.01, *p<0.05

Beliefs and attitude

Multiple regression analysis is employed to test the direct effects of the antecedents (informativeness (X_1), entertainment (X_2), credibility (X_3), irritation (X_4), ubiquity (X_5), personalization (X_6), opt-in permission (X_7), opt-out permission (X_8), control variables (X_9)) on attitude (AT). The equation of the relationship between the antecedents and attitude will be:

$$AT = A_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + B_6 X_6 + B_7 X_7 + B_8 X_8 + B_9 X_9$$

The following hypotheses were tested in the regression analysis:

H3: Informativeness is positively related to the attitude towards receiving

and reading mobile advertising.

H4: Entertainment has a positive influence on consumers' attitude towards receiving and reading mobile advertising.

H5: Irritation has a negative effect on the attitude towards receiving and reading mobile advertising.

H6: Credibility of advertising has a positive effect on the attitude towards receiving and reading mobile advertising.

H7: Ubiquity has a direct influence on the attitude towards receiving and reading mobile advertising.

H8: Personalization has a positive effect on the attitude towards receiving and reading mobile advertising.

H9a: Preference of opt-in permission (prior permission) has an impact on the attitude towards receiving and reading mobile advertising.

H9b: Preference of opt-out permission has an impact on the attitude towards receiving and reading mobile advertising.

The results showed that the antecedents accounted for 52.4% of the variance in AT. informativeness, entertainment, credibility, irritation, personalization and opt-out permission were found to have significant direct effects on AT,

while the control variables (demographic characteristics of the respondents) did not affect AT significantly. Table 5.10 presents these data. H7 and H9a were not supported by the result.

Table 5.10 Multiple regression analysis model summary variables predicting attitude

Independent variables	B	Std. Error	Std. Coefficient (β)
Informativeness (X_1)	0.208	0.033	0.227***
Entertainment (X_2)	0.268	0.036	0.283***
Credibility (X_3)	0.132	0.032	0.133***
Irritation (X_4)	-0.187	0.031	-0.197***
Ubiquity_right (X_5)	0.020	0.030	0.023
Personalization (X_6)	0.032	0.026	0.041***
Opt-in permission (X_7)	-0.034	0.026	-0.038
Opt-out permission (X_8)	0.093	0.022	0.127***
Control variables (X_9)			
Gender	0.040	0.062	0.017
Age	0.018	0.026	0.022
Education	-0.096	0.069	-0.042
Income	0.007	0.046	0.005

Note: Adjusted R^2=0.524, p< 0.001

***p< 0.001, ** p<0.01, *p<0.05

Beliefs, attitude and intention towards mobile advertising

Enter method was employed to analyze the above relationship. Regression analysis for mobile advertising with the independent variables accounted for 50.8% of the variance in MI. The results are shown in table 5.11.

Regression analysis for mobile advertising with the independent variables accounted for 65.9% of the variance in MI through the mediator AT. With the highest β value (β =0.582) among the independent variables, AT is deemed to be the mediator between the relationship of the independent variables and MI. The explanation power of 'irritation' is the strongest (β = -0.163) among the independent variables. The results are shown in table 5.11.

Three different regression models with behavioral intention as the dependent variable were tested. Model 1 used only demographic or control variables (gender, age, education and income) as the independent variables. Model 2 used demographic variables and the beliefs towards mobile advertising as independent variables. Model 3 used demographic variables, the beliefs towards mobile advertising as independent variables and attitude

as independent variables. The dependent variable of the three models was intention (MI). The significant R^2 change and the relative high coefficient value of attitude (0.582) in model 3 revealed that the mediating effect of attitude was significant.

Table 5.11 Multiple regression analysis model summary variables predicting intention

Dependent variable: Intention (MI)			
Independent variable	**Model 1**	**Model 2**	**Model 3**
Informativeness (X_1)	-	0.123***	-0.004
Entertainment (X_2)	-	0.207***	0.066
Credibility (X_3)	-	0.094**	0.025
Irritation (X_4)	-	-0.271***	-0.163***
Ubiquity_right (X_5)	-	-0.005	-0.029
Personalization (X_6)	-	0.027	0.034
Opt-in permission (X_7)	-	0.015	0.026
Opt-out permission (X_8)	-	0.129***	0.061*
Subjective Norm (SN)	-	0.182***	0.092***
Attitude (AT)	-	-	0.582***
Control variables (X_9)			
Gender	-0.005	0.027	0.018
Age	-0.075*	-0.019	-0.041
Education	-0.155***	-0.068*	0.048
Income	0.049	0.049	0.048
Adjusted R^2	0.015	0.508	0.664
R^2 change	-	0.493**	0.156**

Note: ***p< 0.001, ** p<0.01, *p<0.05

5.3.2. Effect of control variables – Independent-Sample T Test and ANOVA F Test

Independent-Sample T Test and ANOVA F Test were used to analyze the effects of the four control variables on the independent variables and dependent variables (attitude and intention).

Effect of gender

Independent-Sample T Test was employed to test the effect of the control variable, gender on the independent variables as well as the attitude and intention towards mobile advertising. This T test evaluates the difference between the means of two independent groups. The test also evaluates when the mean value of the test variable from one group differs significantly from the mean value of the test variable for the second group. There were 328 male and 342 female respondents in the sample. The results in table 5.12 showed that gender had no effect on all variables.

Table 5.12 Effect of gender

Variables	Mean		Levene's Test for Equality of Variances		T Test for Equality of Means		
	Male	Female	F	Sig.	t	Mean difference	Sig. (2-tailed)
OPTIN	5.4654	5.4581	0.013	0.908	-0.74	-0.00736	0.941
OPTOUT	4.3953	4.5741	9.002	0.003	1.472	0.17875	0.142
PERSON	3.0925	3.0692	5.243	0.022	-0.234	-0.2328	0.815
UBQ_right	3.0808	3.1491	7.347	0.007	0.606	0.6833	0.545
INFO	3.6555	3.7544	0.048	0.827	1.021	0.9890	0.308
ENT	2.8862	2.9893	5.114	0.024	1.109	0.10310	0.268
CRED	3.2033	3.1676	0.044	0.834	-0.399	-0.3561	0.690
IRR	5.0681	4.8977	4.019	0.045	-1.842	-0.17043	0.066
SN	2.8963	2.9113	0.230	0.632	0.165	0.1496	0.869
AT	3.1941	3.2290	11.476	0.001	0.393	0.3494	0.695
MI	3.1138	3.1384	3.727	0.054	0.242	0.2458	0.809

Note:

***p< 0.001, ** p<0.01, *p<0.05

OPTIN: Opt-in permiision, OPTOUT: Opt-out permission, PERSON: personalization, UBQ_right: ubiquity (with right time and place), INFO: informativeness, ENT: entertainment, CRED: credibility, IRR: irritation, SN: subjective norm, AT: attitude and MI: intention.

Effect of age

One-way ANOVA F-Test was used to test the equality of two or more population means, that is, to test the effect of age on the variables. There were 7 age groups in the samples who received and read mobile advertisements. The distribution are as follows: below 18- 19 people; age 18-24- 290 people; age 25-30- 180 people; age 31-35- 76 people; age 36-40- 43 people; age 41-50- 38 people; age 51-60- 38 people; over 60- nil. The results showed that age had a significant influence on variables ‘opt-in permission’, ‘ubiquity’ and ‘social norm’.

Table 5.13 Effect of age

Variable	Means among different age groups								F	Sig.
	Below 18	18-24	25-30	31-35	36-40	41-50	51-60	Total		
OPTIN	5.7368	**5.3092**	5.5648	5.4254	5.4574	5.5965	**6.2222**	5.4617	2.509	0.021*
OPTOUT	4.9649	4.4713	4.3889	4.3947	4.4341	4.5263	5.3472	4.4866	1.686	0.122
PERSON	2.8772	3.1356	3.1241	2.8333	2.9302	3.1404	3.2083	3.0806	0.821	0.554
UBQ_right	2.6053	3.1379	3.0444	**3.4211**	**2.5581**	3.3421	3.4583	3.1157	2.489	0.022*
INFO	3.7895	3.7460	3.6667	3.7456	3.5736	3.7105	3.5556	3.7060	0.241	0.963
ENT	3.1404	2.9230	3.0000	2.9386	2.8682	2.8596	2.7639	2.9388	0.310	0.932
CRED	3.2456	3.2069	3.1926	3.2982	2.8217	3.2719	2.9722	3.1851	1.034	0.402
IRR	4.7018	4.9632	5.0093	4.9518	4.9380	5.0263	5.3056	4.9611	0.517	0.795
SN	**3.2456**	**2.9713**	2.9296	3.0526	2.5891	**2.2368**	2.7778	2.9040	3.317	0.003**
AT	3.3158	3.1770	3.1815	3.3904	3.3101	3.1842	3.0833	3.2119	0.503	0.807
MI	3.0702	3.1000	3.2167	3.1535	3.3333	2.7105	3.0139	3.1264	1.019	0.412

Note:

***p< 0.001, ** p<0.01, *p<0.05

OPTIN: Opt-in permiision, OPTOUT: Opt-out permission, PERSON: personalization, UBQ_right: ubiquity (with right time and place), INFO: informativeness, ENT: entertainment, CRED: credibility, IRR: irritation, SN: subjective norm, AT: attitude and MI: intention.

Effect of education level

One-way ANOVA F Test was employed to analyze the effect of education level. There are three education levels: high school or below (270 people),

undergraduate or professional institute (307 people) and postgraduate (Master degree or above) (93 people).

The results showed that education level affected seven variables, they were: ‘opt-in permission’, ‘informativeness’, ‘entertainment’, ‘credibility’, irritation’, ‘attitude’ and ‘intention’. It had the strongest effect on ‘informativeness’ and then attitude and intention. Those people in the group of undergraduate or professional institute (group 2) held more negative attitude and lower intention towards mobile advertising.

Table 5.14 Effect of education level

Variable	Mean			F	Sig.
	High school or below	Undergraduate or professional institute	Postgraduate (Master or above)		
OPTIN	**5.5691**	5.4647	**5.1398**	3.857	0.022*
OPTOUT	4.5926	4.3453	4.6452	2.348	0.096
PERSON	3.0741	3.0760	3.1147	0.038	0.963
UBQ_right	3.0389	3.1450	3.2419	0.787	0.456
INFO	**3.9037**	**3.6526**	**3.3082**	8.511	0.000***
ENT	**3.0914**	2.8893	**2.6595**	5.006	0.007**
CRED	**3.2877**	3.1824	**2.8961**	4.028	0.018*
IRR	**4.8160**	**5.0836**	5.1219	4.378	0.013*
SN	2.8728	2.9511	2.8387	0.485	0.616
AT	**3.3963**	**3.0782**	3.1183	5.974	0.003**
MI	**3.3370**	**2.9772**	3.0072	5.947	0.003**

Note:

***p< 0.001, ** p<0.01, *p<0.05

OPTIN: Opt-in permiision, OPTOUT: Opt-out permission, PERSON: personalization, UBQ_right: ubiquity (with right time and place), INFO: informativeness, ENT: entertainment, CRED: credibility, IRR: irritation, SN: subjective norm, AT: attitude and MI: intention.

Effect of income

One-way ANOVA F Test was used to analyze the effect of income. There are four income groups: below HK$10,000 (309 people), HK$10,000 –

HK$20,000 (249 people), HK$20,001 – HK$30,000 (81 people) and over HK$30,000 (24 people).

The results showed that income affected variables ‘personalization’, ‘informativeness’ and ‘subjective norm’. Income group over HK$30,000 had the most negative opinion towards subject norm. Income group of HK$20,001-HK$30,000 had the most negative attitude and intention towards mobile advertising.

Table 5.15 Effect of income

Variable	Income mean				F	Sig.
	Below HK$10,000	HK$10,001-HK$20,000	HK$20,001-HK$30,000	Over HK$30,000		
OPTIN	5.4196	5.5074	5.4198	5.6667	0.448	0.719
OPTOUT	4.5502	4.5328	4.1193	4.7639	1.988	0.115
PERSON	3.0000	**3.2637**	2.92424	**2.6944**	3.198	0.023*
UBQ_right	3.0372	3.2249	3.1875	3.1139	0.861	0.461
INFO	**3.7454**	3.8072	**3.3128**	3.5417	3.518	0.015*
ENT	2.9720	3.0067	2.7243	2.6528	1.654	0.176
CRED	3.1640	3.2236	3.2716	3.1890	0.858	0.462
IRR	4.9320	5.0000	5.0123	5.1667	0.397	0.755
SN	**2.8652**	**3.0525**	2.8107	**2.2500**	1.169	0.006**
AT	3.1953	3.3199	3.0000	2.9583	2.105	0.098
MI	3.0895	3.2744	2.8683	3.0556	2.232	0.083

Note:

***p< 0.001, ** p<0.01, *p<0.05

OPTIN: Opt-in permission, OPTOUT: Opt-out permission, PERSON: personalization, UBQ_right: ubiquity (with right time and place), INFO: informativeness, ENT: entertainment, CRED: credibility, IRR: irritation, SN: subjective norm, AT: attitude and MI: intention.

5.3.3. Structural equation modeling

Confirmation factor analysis (CFA) was conducted before testing the hypothesis in the proposed model. Model 1 was the proposed model examined with CFA. After the analysis, two models were tested, they were Model 2 and Model 3. Both of them were modified models based on the results of CFA. Same as the proposed model, Model 2 was the model with attitude serving as a mediator and belief dimensions serving as antecedents. In Model 3, instead of a mediator, attitude became one of the antecedents. The aim of setting up Model 3 was to test the direct effect of the belief dimensions on intention. The details of the examination of the models will be further explained in the following sections.

Confirmatory factor analysis

Confirmatory factor analysis was employed to provide a confirmatory test of the measurement scale for the all the dimensions that was generated by the EFA. The total usable sample of 670 observations was used for the analysis. Dimensions are known as latent constructs and attributes are known as reflective indicators. The hypothesized measurement model included eleven latent constructs, they were: intention, attitude, subjective

norm, entertainment, informativeness, credibility, irritation, ubiquity, personalization, opt-in permission and opt-out permission.

The measurement model was assessed by reviewing the overall model fit. The overall model fit represents the degree to which the specified indicators represent the hypothesized latent construct. Three types of overall model fit measures were examined: absolute fit indices, including the Chi-square test, root mean square error of approximation (RMSEA), goodness-of-fit (GFI) index, and standardized root mean square residual (SRMR); incremental fit indices, including comparative fit index (CFI) and normal fir index (NFI); and parsimonious fir indices, which adjust the measures of fit to compare model with different numbers of coefficient to determine the fit that is achieved by each coefficient and included the normed Chi-square (Chi-square/degree of freedom, (χ^2/df) and adjusted goodness-of-fit index (AGFI).

The absolute fit indices directly measure the fitness of a model because they provide information on the extent to which the model as a whole provides an acceptable fit to the data (Kenny and McCoach, 2003). Incremental fit

indices assess the incremental fit of the model compared to the null. Parsimony fit indices measure provide information about which model in a set of competing models is best relative to its complexity model (Hair, et al., 2006).

Confirmatory factor analysis for all the variables in the hypothesized model

A proper evaluation of the latent variables is a pre-requisite for the evaluation of a structural model (Anderson and Gerbing, 1982). Hence, CFA was conducted for all the variables in the hypothesized model and the results (see Table 5.16) showed that the model did not totally fit, as most of the indicators (except RMSEA, CFI and AGFI) were above the cut-off points. The model (Model 1) is shown in Figure 5.1.

Figure 5.1 Proposed structural model (Model 1)

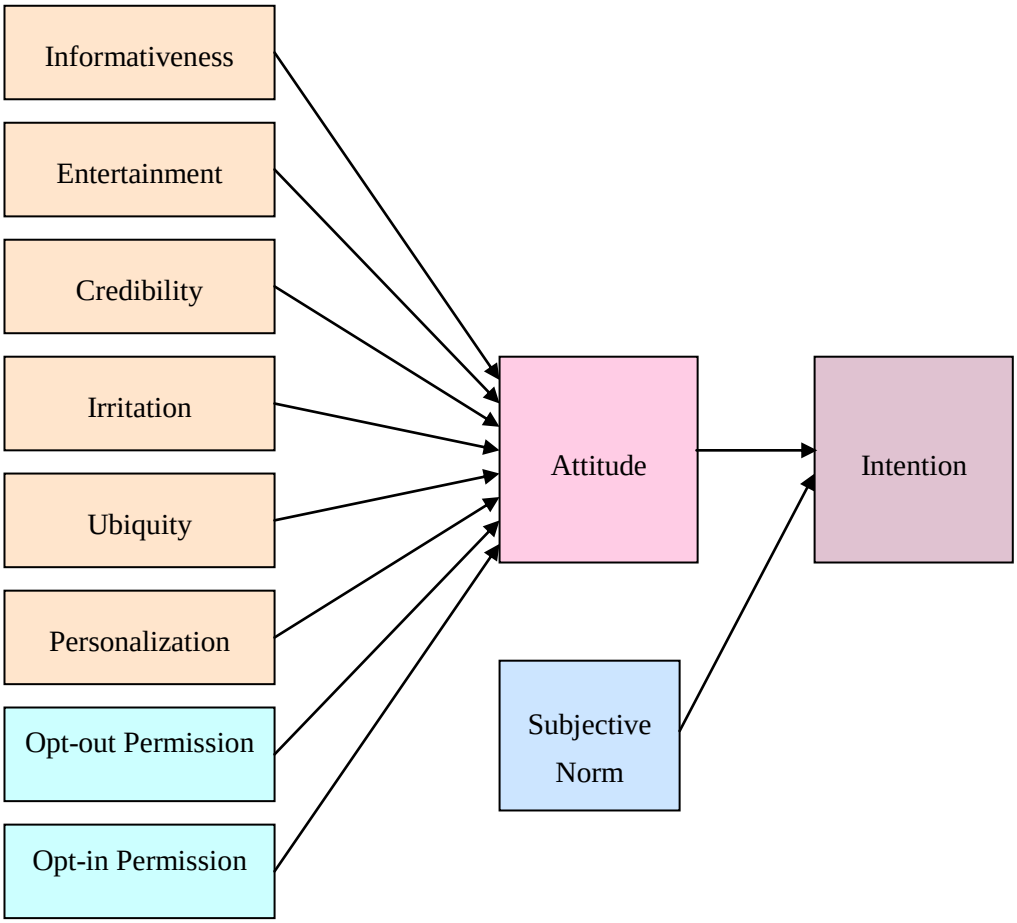


Table 5.16 Comparison of fit indices for all the variables in the hypothesized model (Model 1)

χ^2 with degrees of freedom	1847.679 (P=0.0) with 472df	Fit guidelines
GFI	0.861	≥0.90
RMSEA	0.066	<0.07
RMR	0.124	≤0.08
SRMR	0.072	<0.05
NFI	0.894	≥0.90
CFI	0.918	≥0.90
AGFI	0.825	≥0.80
χ^2/df	3.915	1-3

Assessment of Model 2

The initial model (Model 1) was modified based on the modification indices which were suggested by the CFA output. Based on the modification indices, two items under ubiquity dimension were deleted, they were: "I like mobile advertising which exists anywhere." (UBQ3_any) and "I like mobile advertising which exists anytime." (UBQ4_any). Another item under personalization is also deleted ("Mobile advertising is available for my preference") (PERSON 3).

Convergent Validity

To establish convergent validity, factor loadings, variance extracted, and composite reliability were accessed. The majority of the standardized loadings of the indicators were above 0.7 and the average was 0.894. The majority of the composite reliability was also greater than 0.7, and the average variance extracted was above 0.80. The measurement items and convergent validity assessment is included in Tables 5.17 and 5.18.

Table 5.17 Factor Loadings of CFA (Model 2)

Questions	Variables	Measure items	Factor Loadings
Q6	Opt-in permission	Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is good.	0.838
Q7		Having chance to select mobile ads (e.g. entertainment, finance, news) in advance is important.	0.856
Q8		I like to select mobile ads (e.g. entertainment, finance, news) in advance.	0.849
Q9	Opt-out permission	Having chance to select whether I will continue receiving similar mobile ad after reading the ad is good.	0.908
Q10		Having chance to select whether I will continue receiving similar mobile ad after reading the ad is important.	0.891

Questions	Variables	Measure items	Factor Loadings
Q11	Opt-out permission	I like to select whether I will continue receiving similar mobile ad after reading the ad.	0.868
Q12	Personalization	Contents in mobile advertising are personalized.	0.896
Q13		Mobile advertising displays personalized message to me.	0.904
Q15	Ubiquity	Mobile advertising appears at right timing.	0.867
Q16		Mobile advertising appears at right location.	0.815
Q19	Informativeness	Mobile advertising is a good source of product or service information.	0.596
Q20		Mobile advertising supplies relevant product or service information.	0.705
Q21		Mobile advertising provides timely information.	0.750
Q22	Entertainment	Mobile advertising is interesting.	0.799
Q23		Mobile advertising is enjoyable.	0.950
Q24		Mobile advertising is entertaining.	0.958
Q25	Credibility	Mobile advertising is reliable.	0.899
Q26		Mobile advertising is trustworthy.	0.949
Q27		Mobile advertising is believable.	0.838
Q28	Irritation	Mobile advertising is vexing.	0.820
Q29		Mobile advertising is annoying.	0.977
Q30		Mobile advertising is irritating.	0.741

Questions	Variables	Measure items	Factor Loadings
Q31	Irritation	Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) think I should read mobile ads.	0.810
Q32	Subjective norm	Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be wise.	0.881
Q33		Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be useful.	0.884
Q34	Attitude towards mobile advertising	I think mobile advertising is good.	0.772
Q35		I like to receive and read mobile advertisements.	0.861
Q36		My attitude towards mobile advertising is positive.	0.820
Q37	Intention of receiving and reading mobile advertising	My intention to receive and read mobile ads is high.	0.792
Q38		I will consider reading mobile ads.	0.954
Q39		I will receive and read mobile advertisements in future.	0.896

Table 5.18 Composite reliability and average variance extracted (Model 2)

Constructs	Composite Reliability (CR)	Average Variance Extracted (AVE)
Opt-in Permission	0.959	0.939
Opt-out Permission	0.979	0.939
Personalization	0.962	0.927
Ubiquity	0.934	0.876
Informativeness	0.938	0.837
Entertainment	0.990	0.972
Credibility	0.989	0.969
Irritation	0.981	0.946
Subjective Norm	0.984	0.953
Attitude	0.981	0.945
Intention	0.986	0.959

As shown in Table 5.19, the fit indices showed the new measurement model (Model 2, see Figure 5.2) with all of the variables to have a good fit. The Chi-square difference test was conducted to evaluate whether each modification was justified. Model 2 was found to be the preferred model, with all of the fit statistics being fairly acceptable (χ^2 = 933.983, P=0.0), df = 388, χ^2/df = 2.407, GFI = 0.917, RMSEA = 0.046, RMR = 0.068, SRMR = 0.035, NFI = 0.941, CFI = 0.964, AGFI = 0.894).

Figure 5.2 Modified structural model (Model 2)

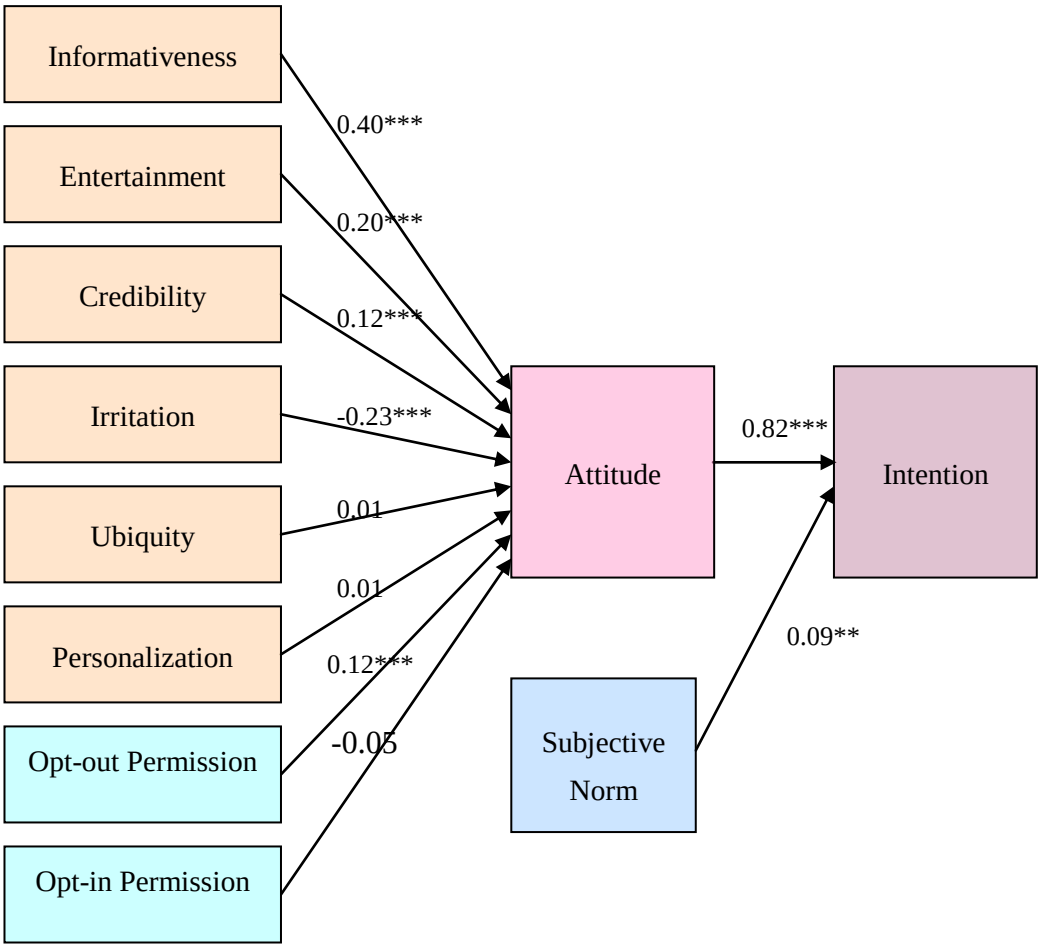


Table 5.19 Comparison of fit indices for all the variables in the new hypothesized model (Model 2)

χ^2 with degrees of freedom	933.983(P=0.0) with 388 df	Fit guidelines
GFI	0.917	≥0.90
RMSEA	0.046	<0.07
RMR	0.068	≤0.08
SRMR	0.035	<0.05
NFI	0.941	≥0.90
CFI	0.964	≥0.90
AGFI	0.894	≥0.80
χ^2/df	2.407	1-3

Beliefs and Intention (Model 3)

Model 3 was set up to test the direct relationships between the exogenous variables (beliefs) and intention, i.e. without mediation of attitude (see Figure 5.3). Table 5.20 shows the fit statistics for Model 3. The Chi-square difference test was conducted to evaluate whether each modification was justified. The results showed that Model 3 was not good fit with most of the indicators (GFI, RMSEA, RMR, SRMR and χ^2/df) were above or below the fit guidelines.

Figure 5.3 Modified structural model (Model 3)

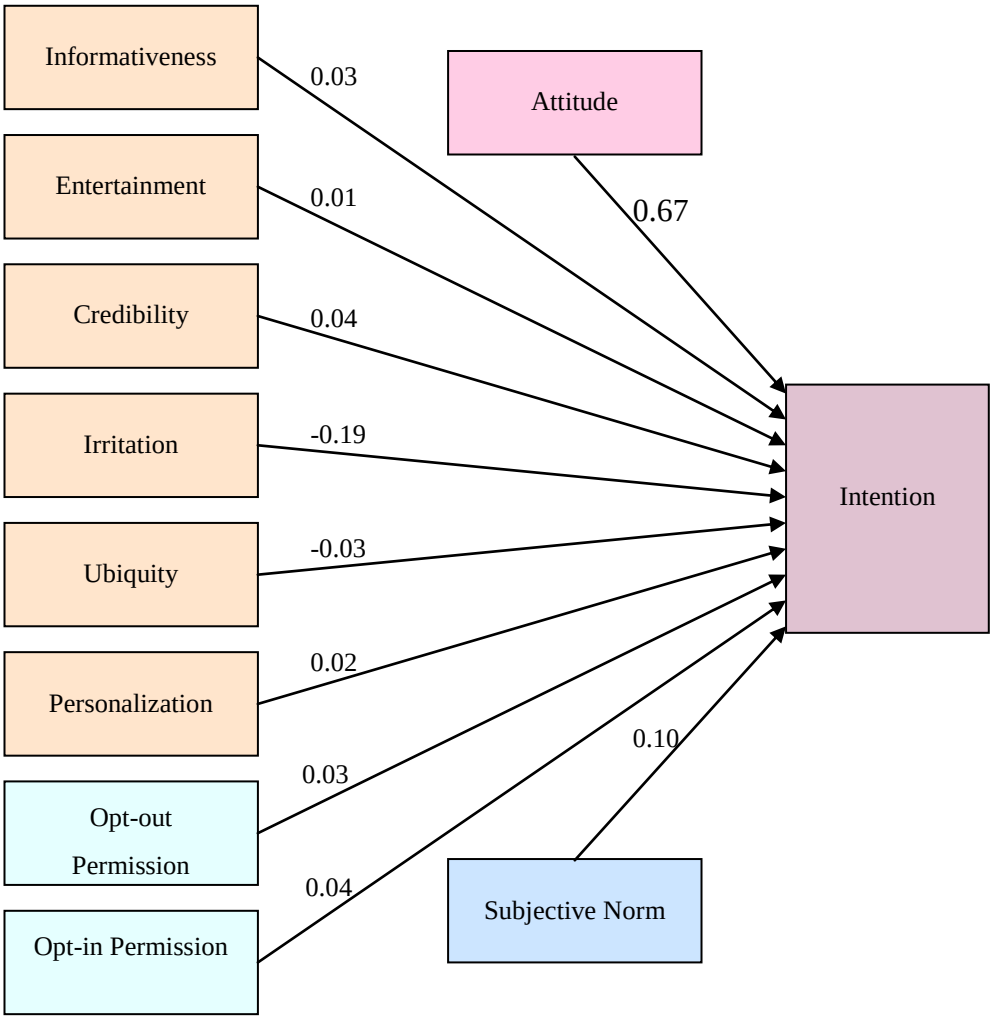


Table 5.20 Comparison of fit indices for all the variables in the new hypothesized model (Model 3)

χ^2 with degrees of freedom	1414.794(P=0.0) with 388 df	Fit guidelines
GFI	0.892	≥0.90
RMSEA	0.063	<0.07
RMR	0.305	≤0.08
SRMR	0.161	<0.05
NFI	0.911	≥0.90
CFI	0.933	≥0.90
AGFI	0.862	≥0.80
χ^2/df	3.646	1-3

Testing of the Hypotheses

After the overall structural model was evaluated, the individual parameter estimates were examined. The hypotheses were tested by evaluating the relationships between the endogenous and exogenous variables. Table 5.19 presents the standardized path coefficients and significance of all the hypothesized relationships in the model. The standardized coefficient report the resulting change in an endogenous variable from a unit change in an exogenous variable, with all of the other exogenous variables being held consistent (Hair, et al., 1995).

Table 5.21 SEM results for Model 2

Hypothesis	Path	Std Coef. (β)	Results
H1	Attitude → Intention	0.82***	Supported
H2	Subjective Norm → Intention	0.09**	Supported
H3	Informativeness → Attitude	0.40***	Supported
H4	Entertainment →Attitude	0.20***	Supported
H5	Credibility → Attitude	0.12***	Supported
H6	Irritation →Attitude	-0.23***	Supported
H7	Ubiquity→ Attitude	0.01	Not Supported
H8	Personalization → Attitude	0.01	Not Supported
H9a	Opt-in Permission → Attitude	-0.05	Not Supported
H9b	Opt-out Permission → Attitude	0.12***	Supported

Note: ***p< 0.001, ** p<0.01, *p<0.05

H1: Attitude towards reading and receiving mobile advertising will lead to the behavioral intention to receive and read mobile advertisement recurrently in future.

Hypothesis 1 was supported, as attitude was found to have a strong direct effect on intention with $R^2 = 0.66$. It means that attitude explained 66% of the variance in the behavioral intention.

H2: The more positive the subjective norm, the higher the behavioral intention to receive and read mobile advertising recurrently in future.

Hypothesis 2 was supported, as subjective norm was found to have a direct influence on intention with $\beta = 0.09$.

H3: Informativeness has a positive effect on the attitude towards receiving and reading mobile advertising.

Hypothesis 3 was supported, as informativeness was found to have a strong direct influence on attitude with $\beta = 0.40$.

H4: Entertainment has a positive effect on the attitude towards receiving and reading mobile advertising.

Hypothesis 4 was supported, as entertainment was found to have a direct influence on attitude with $\beta = 0.20$.

H5: Credibility of advertising has a positive effect on the attitude towards receiving and reading mobile advertising.

Hypothesis 5 was supported, as credibility was found to have a direct influence on attitude with $\beta = 0.12$.

H6: Irritation has a negative effect on the attitude towards receiving and reading mobile advertising.

Hypothesis 6 was supported, as irritation was found to have a direct negative influence on attitude with $\beta = -0.23$.

H7: Ubiquity has a positive effect on the attitude towards receiving and reading mobile advertising.

Hypothesis 7 was not supported, as ubiquity was not found to have a significant effect on attitude with $\beta = 0.01$.

H8: Personalization has an impact on the attitude towards reading and receiving mobile advertising.

Hypothesis 8 was not supported, as personalization was not found to have a significant effect on attitude with β = 0.01. The result was different from that of multiple regression analysis. The results of the analysis showed that personalization influenced attitude significantly. However, the standardized coefficient value of personalization was relatively low (β= 0.041) when compared with the coefficient values of other variables which had significant effects on attitude (refer to Table 5.10).

H9a: Preference of opt-in permission (prior permission) has an impact on the attitude towards receiving and reading mobile advertising.

Hypothesis 9a was not supported, as opt-in permission was not found to have a significant effect on attitude with β = -0.05.

H9b: Preference of opt-out permission (prior permission) has an impact on the attitude towards receiving and reading mobile advertising.

Hypothesis 9b was supported, as opt-out permission was found to have a significant effect on attitude with β = 0.12.

CHAPTER 6: DISCUSSION AND CONCLUSION

The results reported in Chapter Five are discussed in this chapter in light of previous research. This chapter summarizes the results of the study and discusses the theoretical and managerial implications of the findings. The contributions and limitations of the study and further research are also presented.

6.1. Discussion

The main purpose of this study is to create a model of the behavioral intention of Hong Kong people's receiving and reading mobile advertising, to test the relationships among different variables and investigate the empirical evidence for the causal relationships among different beliefs, attitude, subjective norm and behavioral intention. The study also examines whether mobile phone users with different demographic characteristics differ in their beliefs, attitude, subjective norm and behavioral intention. The main findings that are concerned with the research objectives are presented in the following sections.

Research Question 1: Which belief dimension has the strongest effect on the behavioral attitude towards and intention to receive and read mobile advertising in theory of reasoned action model?

Attitude

This study found that certain beliefs (informativeness, entertainment, credibility, irritation and opt-out permission) had significant effect on attitude. Consistent with the study about mobile advertising in Taiwan (Tsang, et al., 2002) and Hong Kong (Wong and Tang, 2008a & 2008b), entertainment exhibited the strongest effect ($\beta = 0.283$, $p < 0.001$) on attitude among the beliefs. Informativeness was the second salient factor ($\beta = 0.227$, $p < 0.001$) which positively influenced attitude and irritation had a significant negative effect ($\beta = -0.197$, $p < 0.001$) on attitude. Western studies on traditional advertising found that entertainment, informativeness and irritation were the most salient factors affecting the perception of advertising (Ducoffe, 1995; Shavitt, et al., 1998). The value of entertainment in advertising lies in its capability to fulfill audience needs for escapism, diversion, aesthetic enjoyment, or emotion release (McQuail, 1983).

Intention

This study also found that attitude (ß = 0.582) had the strongest impact on the intention, followed by irritation (ß = -0.163), subjective norm (ß =-0.092) and opt-out permission (ß = 0.061). An online survey (Bauer, et al., 2005) found that the attitude towards mobile marketing strongly determined the behavioral intention to use mobile marketing services whereas subjective norm, though a significant antecedent, exhibited a relatively weak impact on the intention. Receiving and reading mobile advertising is a highly personalized action and therefore the chance of the intention to receive and read mobile advertisements to be affected by other people would probably be small. This was reflected by the low mean score of 2.90 of subjective norm items.

Opt-out permission positively influenced the intention but the relationship was relatively weak. Opt-out permission had a stronger impact on attitude (β = 0.127) than that on the intention (β = 0.061). It many be due to the fact that the concept of permission marketing in electronic media has been just introduced by the government since 2007 and therefore Hong Kong mobile

phone users' acquaintance with the permission concept may not be as strong as that in western countries.

It is interesting to find that irritation influenced intention significantly and its standardized coefficient was even higher than that of subjective norm. A study conducted among college students in Taiwan showed that non-intrusiveness of mobile advertising had a positive effect on the intention to read mobile advertising (Yang, 2007). Inferring from the results of the study, irritation would negatively affect the intention to read mobile advertising. The results of this study have showed that irritation is one of the most important impacts affecting both attitude and intention.

Subjective norm refers to an individual's perception of what important people think he or she should or should not do, and the individual's inclination to comply with their specific desires (Ajzen and Fishbein, 1980). It means that subjective norm is determined by social influence which is exerted by reference groups. However, the low mean score (2.90 on a 7-point scale) of subjective norm has shown that receiving and reading mobile advertising is an individual action which is seldom influenced by

other people. This would be a reason contributing to the relative weak influence of subjective norm.

Research Question 2: What are the effects of personalization, ubiquity and permission (opt-in and opt-out), which are special characteristics of mobile advertising, on the attitude towards receiving and reading mobile advertising?

It is surprising that only opt-out permission ($\beta = 0.127$) influenced attitude significantly among the three constructs. Opt-out permission, rather than opt-in permission had a significant influence because consumer might spend less time in making option when the permission asked for is clear and prominent (Beeler, 2000), particularly when people are too busy to spend time on making options. The findings from both focus group interviews and survey showed that irritation was one of the important factors affecting attitude. The participants in focus group interviews expressed that mobile advertising was annoying, especially when they were busy at work. Relevant and well-crafted mobile advertising could be viewed as another

form of spam when the users received too many commercial messages which they have opted-in with (Bruner II and Kumar, 2007; Fuller, 2005).

Under the existing opt-out permission policy, it seems that opt-in permission was not popular in Hong Kong. Opt-out permission is legally recognized while opt-in regime is optional, that is, this regime is not required by the regulation and it only provides choices for consumers. The results showed that the respondents read four to six mobile advertising (mean = 3.34) in average per month but the number of getting prior permitted mobile advertising was very small (mean = 1.26), nearly zero. However, the results indicated that opt-in permission did not influence attitude significantly, although the acceptance of opt-in permission is high (mean = 5.46). A British study (Bamba and Barnes, 2007) has shown that the willingness to give prior permission (opt-in permission) is low with an average mean score of 1.56. To raise the willingness, the study suggested that the availability of opt-out permission regime was the most important condition.

Personalization is one of the main characteristics of mobile advertising. Contradictory to the results of a mobile advertising study in mainland China

(Xu, 2006), the current research shows that personalization did not significantly influence attitude. It may be due to the fact that personalization in mobile advertising can only be realized if it offers credible and trustworthy information to the mobile phone users (Peng, 2006). The low mean score of credibility (mean = 3.19) in this study reflected that the users did not believe mobile advertising and thus personalization had little effect on attitude.

A cross-cultural study in the United States and Pakistan indicated that personalization (personal attachment) and social influence (subjective norm) did not significantly and directly affect mobile marketing acceptance in the two countries (Sultan and Rohm, 2008). The authors of the study explained that the daily use of mobile phones satisfied consumers' needs with respect to personal attachment and social influence. The two factors could be viewed as moderators in the acceptance of mobile marketing rather than direct antecedents. The interpretation can serve as a footnote of the insignificant effect of personalization in this study.

Apart from the moderating effect of social pressure, cultural orientation would be one of the factors leading to the insignificant effect of personalization. Culture influences individual's beliefs and attitude (Hanna and Wozniak, 2001). Hofstede (1980) has identified five cultural dimensions which can explain the human behavior under different cultures. The dimensions are power distance, uncertainty avoidance, individualism/collectivism, masculinity/feminity, and term orientation. Among the five dimensions, individualism/collectivism can explain the insignificance. Asian people, including Chinese, are identified as collectivists in terms of culture. They tend to be concerned about relationships with their in-groups (family, tribe, nations, etc) and behave in a communal way (Mills and Clark, 1982). The people in collective culture behave on the basis on the norms of their in-groups (Triandis, 2001). Personalization is a process including the elicitation of consumers' preferences and tailoring of product suggestions to the specific and unique choices (Kramer, et al., 2007). It means that personalization is based on an individual's own preference. Consumers in individualistic cultures tend to prefer personalized products or services, while consumers in collectivistic cultures are more likely to appreciate collective preferences of a relevant

in-group rather than their own individual choices (Kramer, et al., 2007). Mainly under the collectivistic culture, Hong Kong people may therefore not to prefer personalized products or services.

Ubiquity did not have a significant positive effect on attitude. Some of the focus group interviewees, especially males, said that they were not willing to receive those mobile advertising which was time-sensitive and location-based because they thought that the advertisements were annoying. Another study of wireless technology capabilities of providing geographic-specific information to consumers revealed that the location-related services were viewed as an invasion of privacy (Greenspan, 2002). The mobile phone users might perceive ubiquitous advertisements as an invasion of privacy. The low mean score (2.20) indicated the negative perception on this form of advertising.

Research Question 3: How do mobile phone users evaluate mobile advertising?

In this study, the mobile phone users' evaluation of mobile advertising was mainly measured by the attitude towards receiving and reading mobile

advertising. The findings showed that the attitude was negative with a low mean score of 3.21 on a 7-point scale. Suggested by Ajzen and Fishbein (1980), attitude is determined by beliefs held by a person. This study measured eight beliefs dimensions and their mean scores are as follows: informativeness (3.71), entertainment (2.94), credibility (3.19), irritation (4.98), ubiquity (2.20), personalization (3.08), opt-in permission (5.46) and opt-out permission (4.49). The relatively low mean scores of informativeness, entertainment, credibility and ubiquity and relatively high mean score of irritation contributed to the negative attitude.

Research Question 4: What are the attitude and intention of mobile phone users towards receiving and reading mobile advertising?

The low mean scores showed that the attitude towards receiving and reading mobile advertising (mean = 3.21) and the intention to receive and read mobile advertising (mean = 3.13) is low. A cross-cultural study showed that Hong Kong respondents were less satisfied with m-commerce service and held a more negative attitude towards mobile internet than those respondents in the United Kingdom (Harris et al., 2005). As discussed in

research question 3, the strong negative impact of irritation would contribute to the negative attitude and intention of receiving and reading mobile advertising.

Research Question 5: Do mobile phone users with different demographic characteristics differ in the belief, attitude, subjective norm and intention to receive and read mobile advertisements?

The findings showed that gender did not influence attitude and intention significantly. The findings also showed that male and female held similar levels of beliefs and subjective norm. These results are not consistent with other advertising studies. Haller (1974) found that female students tended to hold more irritating belief than male students did. Sheehan (1999) found that male exhibited more positive beliefs and attitudes towards Internet advertising. Okazaki's (2007) experimental study found that Japanese females had more favorable attitude towards mobile advertising than males did.

The findings of this study showed that young people tended to have lower preference on opt-in permission. The opt-in permission mean scores of age group 19-24 (mean = 5.31) was lower than that of age group 51-60 (mean = 6.22). The young respondents also tended to be influenced by their peers or other important people. The subjective norm mean scores of age group 18-24 (mean = 2.97) was relatively higher than that of age group 41-50 (mean = 2.24). It seems that age group 18-24 generally has less negative opinions on the above three variables, but the overall differences are not significant. Different from the previous studies about advertising, this study found that age did not have significant impact on attitude and intention.

This study showed that those respondents in the group of undergraduate or professional institute (group 2) tended to hold more negative attitude (mean = 3.08) and intention (mean = 2.98) towards mobile advertising than that of other two groups (group 1- high school or below; group 3- postgraduate). The findings also suggested that people with lower education level held more positive beliefs, attitude and intention. Their mean scores of informativeness (3.90), entertainment (3.09) and credibility (3.29) were relatively higher and those of irritation (4.82) were relatively lower than

those in other groups. The mean scores of attitude was 3.40 and intention was 3.34.

The findings showed that income did not have significant effect on attitude and intention but it varied in the beliefs of personalization and subjective norm. Those respondents in the highest income group (with monthly income over HK$30,000) tended to have lower mean scores on the items of personalization (2.69) and subjective norm (2.25). The respondents in the highest income group may have relatively higher education level. The findings showed that respondents with higher education level tended to hold more negative attitude and intention towards mobile advertising.

Research Question 6: What are the reasons of not reading mobile advertisements?

Among the 77 respondents who did not read mobile advertisements, the main reasons they held include: “I do not like mobile advertising” (45.5%), “I do not like advertising at all” (16.9%), “There are too many advertising (13%). Other reasons are related to the beliefs which affect the attitude

towards mobile advertising. For instance, the reasons of "The mobile advertisements are not permitted by me in advance" (11.7%) is related to permission; "I feel that the mobile advertising is irritating" (9.1%) is related to irritation; "The mobile advertisements are not relevant to me" (6.5%) is related to personalization; "The mobile advertisements are not useful" (5.2%) is related to informativeness; "The mobile advertisements are not credible" (3.9%) is related to credibility; and "I am not interested in the mobile advertisements" (2.6%) is related to entertainment. Consistent with the behavioral model, the results reflected that belief dimensions would not only influence attitude and intention but also the action.

6.2. Theoretical Implications

This study is guided by the theory of reasoned action (TRA) that was developed and modified by Fishbein and Ajzen (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). The model and its variations have been widely employed in marketing to investigate consumer behavior. TRA proposes that a person's intention to perform a specific action is a function of that person's attitude towards the action and the subjective norm to which the person is subject. Mobile advertising is a new form of advertising and it has

gained popularity worldwide, especially in Asia and Europe. It is important for marketers to know how consumers evaluate the new advertising. Being able to identify attitude towards receiving and reading mobile advertising or subjective norm would help marketers to better advertise their products or services. It is also crucial for them to understand what they can do to create positive attitude and how they can manipulate the areas they can control. The significant effect of opt-out permission implies that this permission regime can be employed to predict the attitude towards mobile advertising. This is a pioneering academic study to investigate consumers' attitude and intention on mobile advertising and the underlying factors affecting attitude in China. In addition, this study validates previous research conducted in western countries. The belief dimensions (informativeness, entertainment, credibility, irritation) in previous advertising research (e.g. Ducoffe, 1994;1995) have been found to have significant relationships with attitude. It has also been found that entertainment has the strongest effect on attitude. The findings are consistent with Tsang (2004)'s mobile advertising study.

The results of this study revealed that personalization did not have significant effect on attitude. The results were different from that of Xu's

(2007) study in Guangdong, mainland China. His study found that personalization is one of the most important factors affecting the attitude towards mobile advertising. In addition, the results of this study showed that irritation did not only influence the attitude towards receiving and reading mobile advertising but also the intention to receive and read mobile advertisements. Previous studies found that irritation is a significant factor which affects attitude but it seems that there has been no attempt to find its effect on intention in the TRA model.

This empirically oriented study reveals that ubiquity, the main feature of mobile advertising, is not as important as those theoretically based studies suggested. Mobile advertising will not gain popularity as high as traditional advertising medium does unless the service providers can develop new strategies to create a more favorable condition for mobile advertising, for example, to develop 3G platform both locally and globally.

6.3. Managerial Implications

Mobile phones have become daily necessities for many people, especially for teenagers and young adults. Besides traditional media (TV, radio, print

ad, direct mail, outdoor ad, etc) and Internet, mobile advertising provides marketers another platform to reach potential consumers. The results of this study can be used by marketers to better understand the belief dimensions that contribute to consumers' attitude towards receiving and reading mobile advertisements. Adidas AG launched mobile campaigns from 2004 to 2006 and the company found that several factors influenced the marketing effectiveness, including mobile technology and penetration as well as the consumer acceptance of mobile marketing (Sultan and Rohm, 2008). It implies that attitude towards advertising would affect marketing effectiveness. The findings of this study showed that both the attitude and intention to receive and read mobile advertisements were unfavorable. The results also showed that intention to receive and read mobile advertisements was mainly guided by the attitude. Other studies have revealed that the more positive the attitude towards mobile services or mobile advertising, the higher the intention to use the services or receive the advertisements (e.g. Baurer, et al., 2004; Nysveen, et al., 2005; Tsang, et al., 2004). The unfavorable attitude towards mobile advertising, especially the unsolicited SMS advertisements, implies that advertisers have to put more effort in making mobile advertising to be attractive to the mobile phone users.

Marketers can improve consumers' attitude and intention by strengthening or relieving certain perceptions held by consumers.

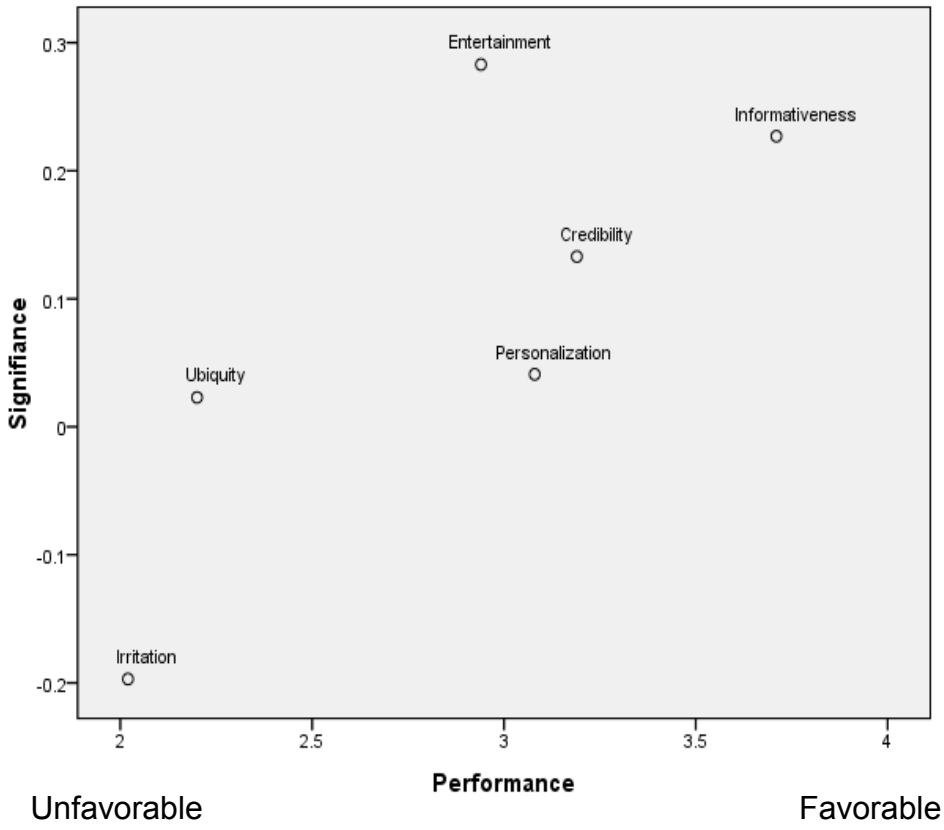
Among the eight belief dimensions, entertainment dimension had the strongest effect on respondents' attitudes towards receiving and reading mobile advertising. However, the mean score of the dimension was relatively low. The results reflect that consumers think that mobile advertisements are boring. If more creative and interesting mobile advertisements are used, consumers' attitude and intention to receive and read mobile advertisements will become more positive.

The mean score of irritation was relatively high among the eight belief dimensions and irritation dimension ranked the third dimension in terms of the strength in relation to attitude. Irritation was also one of the major reasons for not reading mobile advertising. A study has shown that the higher the volume of advertisements received by consumers, the more negative attitude towards direct marketing (Phelps et al., 2000). Marketers can send mobile advertisements at suitable time and in suitable amount so as to avoid interruption and disturbance to consumers. Advertisers should send

mobile advertisements with cautions. For instance, they should send catering mobile advertisements to consumers at lunchtime but not at midnight. When the consumers feel less annoyed about the advertisements, they would have more favorable attitude towards receiving and reading mobile advertising.

The results of this study also revealed that other belief dimensions such as informativeness, credibility, personalization had significant effects on the attitude. Marketers can improve consumers' attitude by strengthening the mentioned dimensions. For instance, the information provided in the advertisements should be more relevant to consumers, more trustworthy and more tailor-made for the consumers, their attitude towards receiving and reading the advertisements would improve and thus their intention would be improved. Advertisers can send boutique discount mobile advertisements to the consumers in a shopping mall. The matrix of the performance (mean scores) and significance levels of the belief dimensions in affecting attitude is shown in Figure 6.1.

Figure 6.1 Significance-Performance Matrix of Mobile Advertising characteristics



Note: the performance score of Irritation is reversely coded

The results of this study indicated that beliefs, attitude and intention varied in the respondents with different demographic characteristics. This research showed that the respondents with higher education level and income level tended to hold more negative beliefs, attitude and intention to receive and read mobile advertisements. Moreover, the results revealed that age had a

significant influence on opt-in permission. Marketers may need to make different strategies to target different consumers in order to improve their acceptance on mobile advertising. To target at the consumers who have higher education and income levels, they should develop strategies to improve the attitude of the consumers by reliving the consumers' irritation towards mobile advertising. Marketers should also improve the young consumers' beliefs towards opt-in permission so as to gain their support to mobile advertising.

6.4. Consumer Implications

The mean score of opt-in permission (5.46) was higher than that of opt-out permission (4.49). It shows that consumers prefer opt-in permission to opt-out permission as they can select what kinds of advertisements they want before they receive the advertisements. Nevertheless, the results of the study also showed that opt-in permission did not have any significant influence on attitude nor intention, while the opt-out permission did have significant effect on the attitude and intention. It implies that what the consumers favored may not benefit them; at least their preferred option

would not help change their negative attitude and intention towards mobile advertising.

6.5. Government Policy Implications

The Unsolicited Electronic Messages Ordinance (UEMO) has been enacted by the Legislative Council since 2007. The ordinance covers any electronic messages being sent as text or pre-recorded voice messages to telephones, to fax machine or to email addresses, with a purpose of advertising, promoting or offering any goods, services, business opportunities or the organizations themselves. The ordinance is opt-out- permission based. The results of this study showed that opt-out permission had significant impact on attitude and intention. It implies that the opt-out permission regime operated by the government would improve the public's attitude and intention to receive and read mobile advertising. This ordinance would thus further facilitate the development of mobile advertising in Hong Kong.

6.6. Limitations

The results of this study provide support for the proposed theoretical model of attitude and behavioral intention of mobile phone users to receive and read mobile advertisements. However, there are some methodological limitations and thus caution must be taken when interpreting the results.

Sampling bias appears to have occurred in several possibilities. First, convenience sampling was used in some occasions to select the respondents. Compared with the demographic characteristics of the general population statistics, the sample may not necessarily be a good representation of the general population. Second, the survey was conducted within a short period of time frame of four weeks. Third, interviews were only conducted at selected locations and the evaluations of the mobile advertising in other locations in Hong Kong may not have been the same. Mobile phone users who were not in the selected locations were missed out. Fourth, since the respondents were invited to participate in the survey on a voluntary basis, there may have been a non-response bias. The characteristics of those respondents who were not willing to participate in the survey may be different from those participants in this survey.

The survey was conducted by using personal interviews which was guided by a printed questionnaire. Although a coupon was given to the respondents upon completion of the interview, difficulties were still encountered in encouraging the target respondents to participate. Many of them thought that the questionnaire was too lengthy so they were not willing to participate. Some of them thought that the interview was annoying and not credible as some companies promoted their business through conducting interviews. However, some of them were willing to participate in the survey after the interviewers had claimed that the survey was conducted for academic purpose only and they had shown them the student identity cards. Despite of the limitations, the data collection appeared to be appropriate, as it successfully collected the evaluations of the respondents because nearly all the participants were willing to complete the questionnaires.

Measurement of ubiquity is newly developed and further investigation and research are needed for the measurement. In addition, related to the scale ‘attitude’ and ‘intention’, using both receive and read in the same sentence creates the issue of double barreled. It would be better to separate receiving from reading mobile advertising instead of combining them. Furthermore,

'receive' is duplicate because the mobile phone users should have received the mobile advertisements before reading them.

6.7. Future Studies

Several areas have emerged as areas of potential future research. The data collection of this study was done in Hong Kong. Mobile advertising has been developed rapidly in Asia and China is one of the highest potential markets. To investigate the consumers' attitude towards mobile advertising in China, future studies can be conducted in major cities in mainland China such as Beijing, Shanghai and Guangzhou.

Although a reasonable percentage of the variance in behavioral intention was accounted by the attitude and subjective norm, there may be factors other than those included in this proposed model. Future study can aim to identify other significant factors affecting the intention.

Finally, the personalization dimension scale used in this research was adapted from Xu (2007)'s study, which was based on customer service literature. It is probable that the personalization in the mobile advertising

context may be different from that in the customer service context. It would be worthwhile to conduct a research to examine existing measurement scale and further improve the instruments for the measurement of the effect of personalization on consumers' attitude in the context of mobile advertising or marketing.

Appendices

Appendix 1

Correlation Matrix

	OPT IN	OPT OUT	PER-SON	UBQ_ right	INFO	ENT	CRED	IRR	SN	MA	MI
OPTIN	1	.270**	.006	.000	.214**	.092*	.156**	.010	-.060	.103**	.102**
OPTOUT	.270**	1	.156**	.116**	.246**	.224**	.091*	-.269**	.158**	.308**	.327**
PERSON	.006	.156**	1	.561**	.323**	.341**	.197**	-.217**	.380**	.310**	.308**
UBQ_right	.000	.116**	.561**	1	.289**	.331**	.198**	-.159**	.269**	.291**	.242**
INFO	.214**	.246**	.323**	.289**	1	.589**	.427**	-.358**	.328**	.564**	.482**
ENT	.092*	.224**	.341**	.331**	.589**	1	.482**	-.491**	.453**	.625**	.580**
CRED	.156**	.091	.197**	.198**	.427**	.482**	1	-.305**	.300**	.452**	.411**
IRR	.010	-.269**	-.217**	-.159**	-.358**	-.491**	-.305**	1	-.309**	-.501**	-.545**
SN	-.060	.158**	.380**	.269**	.328**	.453**	.300**	-.309**	1	.454**	.458**
MA	.103**	.308**	.310**	.291**	.564**	.625**	.452**	-.501**	.454**	1	.782**
MI	.102**	.327**	.308**	.242**	.482**	.580**	.411**	-.545**	.458**	.782**	1

Table 1. Multiple regression analysis model summary control variables predicting intention

Control variables (X_{10})	B	Std. Error	Std. Coefficient (β)
Gender	-0.014	0.101	-0.005
Age	-0.069	0.042	-0.075*
Education	-0.412	0.111	-0.155***
Income	0.079	0.074	0.049

Note: Adjusted R^2=0.015, p< 0.07

***p< 0.001, ** p<0.01, *p<0.05

Table 2. Multiple regression analysis model summary variables predicting intention

Independent variables	B	Std. Error	Std. Coefficient (β)
Informativeness (X_2)	0.129	0.038	0.123***
Entertainment (X_3)	0.225	0.043	0.207***
Credibility (X_4)	0.107	0.037	0.094**
Irritation (X_5)	-0.295	0.036	-0.271***
Ubiquity_right (X_6)	-0.005	0.031	-0.005
Personalization (X_7)	0.028	0.036	0.027
Opt-in permission (X_8)	0.015	0.031	0.015
Opt-out permission (X_9)	0.108	0.025	0.129***
Subjective Norm (SN_0)	0.203	0.037	0.182***
Control variables (X_{10})			
Gender	0.071	0.073	0.027
Age	-0.018	0.031	-0.019
Education	-0.181	0.080	-0.068*
Income	0.078	0.053	0.049

Note: Adjusted R^2=0.508, p< 0.001

***p< 0.001, ** p<0.01, *p<0.05

Table 3. Multiple regression analysis model summary variables predicting intention through attitude

Independent variables	B	Std. Error	Std. Coefficient (β)
Informativeness (X_2)	-0.004	0.032	-0.004
Entertainment (X_3)	0.072	0.037	0.066
Credibility (X_4)	0.028	0.031	0.025
Irritation (X_5)	-0.177	0.030	-0.163***
Ubiquity_right (X_6)	-0.026	0.025	-0.029
Personalization (X_7)	0.035	0.030	0.034
Opt-in permission (X_8)	0.027	0.025	0.026
Opt-out permission (X_9)	0.051	0.021	0.061*
Subjective Norm (SN_0)	0.103	0.031	0.092***
Attitude (A_0)	0.667	0.039	0.582***
Control variables (X_{10})			
Gender	0.047	0.060	0.018
Age	-0.038	0.025	-0.041
Education	0.077	0.044	0.048
Income	0.077	0.044	0.048

Note: Adjusted R^2=0.664, $p < 0.001$

***$p < 0.001$, ** $p<0.01$, *$p<0.05$

Appendix 2

Hong Kong PolyU Management and Marketing Study

Mobile Advertising Attitude Survey

We are researchers from the Department of Management and Marketing, The Hong Kong Polytechnic University. We are conducting a research about mobile advertising. Your responses to the questions are very important to the success of this study. All the information you provided is strictly confidential. Thank you very much for your contribution.

Please circle the most suitable answer below.

Did you **receive** mobile advertisements ("ads" thereafter) in forms of SMS or MMS in the past three months?	a. Yes	b. No

If your answer is "yes", please start to fill in the questionnaire.

Did you **read** the SMS or MMS ads in the past three months?	a. Yes	b. No

If your answer is "yes", please go to Q.2 and continue the questionnaire.
If your answer is "no", please go to Q.1 and "Other Information" (P.5) directly.

1. Why did you not to read the mobile ads? (you can choose more than one answer)

a. I do not like advertisement at all.
b. I do not like mobile advertising at all.
c. I feel the mobile ads were annoying.
d. I feel there are too many mobile ads.
e. The mobile ads were not permitted by me in advance.
f. I was busy at work or at class when I received the mobile ads.
g. No incentive is offered for reading mobile ads.
h. Other reasons (please specify):

Continued

		Over 15yr	13-15yr	10-12yr	7-9 yr	4-6 yr	1 – 3 yr	less than 1 yr
2.	How many years have you received and read mobile advertising?	7	6	5	4	3	2	1
3.	How many years have you used SMS or MMS for **communication** purpose (e.g. sending message to friends or receiving message from friends)?	7	6	5	4	3	2	1

		More than 15	13-15	10-12	7-9	4-6	1 – 3	Less than 1
4.	How many mobile ads (including SMS and MMS ads) did you read per month in average during past 3 months?	7	6	5	4	3	2	1
5.	Refer to Q.4, how many ads were **permitted by you in advance** in the total ad you read per month?	7	6	5	4	3	2	1

To what extent you will agree with the following statement:

		Totally agree			**Neutral**			**Totally disagree**
6.	Having chance to select mobile ads (e.g. entertainment, finance, news) **in advance** is **good**.	7	6	5	4	3	2	1
7.	Having chance to select mobile ads (e.g. entertainment, finance, news) **in advance** is **important**.	7	6	5	4	3	2	1
8.	I **like** to select mobile ads (e.g. entertainment, finance, news) **in advance**.	7	6	5	4	3	2	1

Continued

	Totally agree			Neutral			Totally disagree
9. Having chance to select whether I will continue receiving similar mobile ad **after** reading the ad is **good**.	7	6	5	4	3	2	1
10. Having chance to select whether I will continue receiving similar mobile ad **after** reading the ad is **important.**	7	6	5	4	3	2	1
11. I **like** to select whether I will continue receiving similar mobile ad **after** reading the ad.	7	6	5	4	3	2	1
12. Contents in mobile advertising are personalized.	7	6	5	4	3	2	1
13. Mobile advertising displays personalized message to me.	7	6	5	4	3	2	1
14. Mobile advertising is available for my preference.	7	6	5	4	3	2	1
15. Mobile advertising appears at right timing.	7	6	5	4	3	2	1
16. Mobile advertising appears at right location.	7	6	5	4	3	2	1
17. I like mobile advertising which exists anywhere.	7	6	5	4	3	2	1
18. I like mobile advertising which exists anytime.	7	6	5	4	3	2	1
19. Mobile advertising is a good source of product or service information.	7	6	5	4	3	2	1
20. Mobile advertising supplies relevant product or service information.	7	6	5	4	3	2	1

Continued

	Totally agree			Neutral			Totally disagree
21. Mobile advertising provides timely information.	7	6	5	4	3	2	1
22. Mobile advertising is interesting.	7	6	5	4	3	2	1
23. Mobile advertising is enjoyable.	7	6	5	4	3	2	1
24. Mobile advertising is entertaining.	7	6	5	4	3	2	1
25. Mobile advertising is reliable.	7	6	5	4	3	2	1
26. Mobile advertising is trustworthy.	7	6	5	4	3	2	1
27. Mobile advertising is believable.	7	6	5	4	3	2	1
28. Mobile advertising is vexing.	7	6	5	4	3	2	1
29. Mobile advertising is annoying.	7	6	5	4	3	2	1
30. Mobile advertising is irritating.	7	6	5	4	3	2	1
31. Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) think I **should** read mobile ads.	7	6	5	4	3	2	1
32. Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be **wise**.	7	6	5	4	3	2	1
33. Most people who are important to me (e.g. family, lover, friend, colleague, and classmate) probably consider my reading of mobile ads to be **useful**.	7	6	5	4	3	2	1
34. I think mobile advertising is good.	7	6	5	4	3	2	1
35. I like to receive and read mobile advertisements.	7	6	5	4	3	2	1

Continued

	Totally agree			Neutral			Totally disagree
36. My attitude towards mobile advertising is positive.	7	6	5	4	3	2	1
37. My intention to receive and read mobile ads is high.	7	6	5	4	3	2	1
38. I will consider reading mobile ads.	7	6	5	4	3	2	1
39. I will receive and read mobile advertisements in future.	7	6	5	4	3	2	1

Other Information

The information you provided will facilitate our research. Please circle the most appreciate answer.

1. Your sex is: a. Male b. Female

2. Your age is:

a. below 18 b. 18-24 c. 25-30 d. 31-35 e. 36-40 f. 41-50 g. 51-60 h. above 60

3. Your education level is:

a. High school or below b. University/ College c. Postgraduate (Master or above)

4. Your monthly income is:

a. HK$5000 or below b. HK$5001- HK$10,000 c. HK$10,001-HK$15,000

d. HK$15,001-HK$20,000 e. HK$20,000-HK$25,000 f. HK$25,000 or above

~End~

Thank you very much for your participation.

香港理工大學 管理及市場學系

手提電話廣告意見問卷調查

我們是香港理工大學管理及市場學系的研究人員，現正進行一項關於手提電話廣告的研究。您的意見無所謂對與錯，只要是您的真實想法，對我們就是莫大的幫助。這是一份不記名的問卷，所收集的意見只會作綜合分析，並不會作個別的研究。您的回答僅供是次研究之用，所有資料將嚴格保密。謝謝！

篩選問題: 請您圈出最為合適的答案。

在過去三個月內，您有沒有**接收**過文字短訊(SMS)或多媒體短訊手提電話廣告(MMS)?	a. 有　b. 沒有

如您的答案是「有」，請繼續回答以下的問題。

在過去三個月內，您有沒有**閱讀**過文字短訊或多媒體短訊手提電話廣告?	a. 有　b. 沒有

*如您的答案是**「有」**，請跳到**問題 2** 及**繼續回答餘下的問題**。*
如您的答案是「沒有」， 請回答問題 1 及「其他資料」(p.4) 部分。

1. 為什麼你不閱讀手提電話廣告? (可選超過一項)

a. 我不喜歡所有廣告。
b. 我不喜歡手提電話廣告。
c. 我對手提電話感到煩厭。
d. 我覺得太多廣告存在。
e. 那些手提電話廣告沒有預先經過我的批准。
f. 當我接收到手提電話廣告時，我正忙於工作或上課。
g. 手提電話廣告沒有提供任何優惠。
h. 其他原因 (請說明):

	超過15年	13-15年	10-12年	7-9年	4-6年	1 – 3年	少於1年
2. 你有多少年接收或閱讀手提電話廣告的經驗?	7	6	5	4	3	2	1
3. 你有多少年使用文字短訊(SMS)或多媒體短訊(MMS)作為**溝通**工具的經驗 (如傳送短訊給朋友或接收朋友的短訊)?	7	6	5	4	3	2	1

	超過15個	13-15個	10-12個	7-9個	4-6個	1 – 3個	完全沒有
4. 在過去三個月內，您平均每月閱讀多少個手提電話廣告(包括文字短訊或多媒體短訊)?	7	6	5	4	3	2	1
5. 承上題，在您平均每月閱讀的手提電話廣告中，有多少個是**事前已獲得您的同意**才發送給您的廣告？	7	6	5	4	3	2	1

對於以下陳述，您的同意程度是:

	完全同意			**中立或無意見**			**完全不同意**
6. 有機會**預先**選擇所接收的手提電話廣告 (如娛樂、財經、新聞等)[1]是**好**的。	7	6	5	4	3	2	1
7. 有機會**預先**選擇所接收的手提電話廣告 (如娛樂、財經、新聞等)是**重要**的。	7	6	5	4	3	2	1
8. 我**喜歡預先**選擇所接收的手提電話廣告 (如娛樂、財經、新聞等)。	7	6	5	4	3	2	1
9. 閱讀手提電話廣告**後**[2]，才選擇將來是否繼續接收同類廣告是**好**的。	7	6	5	4	3	2	1
10. 閱讀手提電話廣告**後**，才選擇將來是否繼續接收同類廣告是**重要**的。	7	6	5	4	3	2	1
11. 我**喜歡**閱讀手提電話廣告**後**，才選擇將來是否繼續接收同類廣告。	7	6	5	4	3	2	1
12. 手提電話廣告的內容是**個性化**[3]**(personalized)**的。	7	6	5	4	3	2	1
13. 手提電話廣告提供**個性化的訊息**。	7	6	5	4	3	2	1
14. 手提電話廣告是根據**我的喜好**而設。	7	6	5	4	3	2	1

[1]例如上台時已經可以選擇你想接收的廣告類型或內容 [2]通常在你收到手提電話廣告後，廣告中才有取消繼續接收的選擇 [3] 個性化：針對您個人的性情、需要或偏好的

	完全同意			中立或無意見			完全不同意
15. 手提電話廣告在適當的**時候**出現。	7	6	5	4	3	2	1
16. 手提電話廣告在適當的**地點**[4]出現。	7	6	5	4	3	2	1
17. 我喜歡**無處不在**的手提電話廣告。	7	6	5	4	3	2	1
18. 我喜歡**無時無刻**出現的手提電話廣告。	7	6	5	4	3	2	1
19. 手提電話廣告是產品或服務**資訊**的一個**好來源**。	7	6	5	4	3	2	1
20. 手提電話廣告提供了**跟我有關**的資訊。	7	6	5	4	3	2	1
21. 手提電話廣告提供了**及時**的資訊。	7	6	5	4	3	2	1
22. 手提電話廣告是**有趣**的。	7	6	5	4	3	2	1
23. 手提電話廣告是令人**愉快**的。	7	6	5	4	3	2	1
24. 手提電話廣告是讓人**高興**的。	7	6	5	4	3	2	1
25. 手提電話廣告是**煩擾**的。	7	6	5	4	3	2	1
26. 手提電話廣告**讓人討厭**。	7	6	5	4	3	2	1
27. 手提電話廣告令人**惱火**。	7	6	5	4	3	2	1
28. 手提電話廣告是**可靠**的。	7	6	5	4	3	2	1
29. 手提電話廣告是**值得信賴**的。	7	6	5	4	3	2	1
30. 手提電話廣告是**可信**的。	7	6	5	4	3	2	1
31. 對我重要的人 (家人、伴侶、朋友、同事、同學) 認為我**應該**閱讀手提電話廣告。	7	6	5	4	3	2	1

[4]有時候假如您身在某個地點，例如旺角，您的手提電話便會收到有關郎豪坊的商業資訊，如優惠廣告等。

	完全同意			中立或無意見			完全不同意
32. 對於我閱讀手提電話廣告，對我重要的人(家人、伴侶、朋友、同事、同學)大概會認為是**聰明人的所為**。	7	6	5	4	3	2	1
33. 對於我閱讀手提電話廣告，對我重要的人(家人、伴侶、朋友、同事、同學) 大概會認為是**有用**的。	7	6	5	4	3	2	1
34. 手提電話廣告是**好東西**。	7	6	5	4	3	2	1
35. 我**喜歡**接收手提電話廣告。	7	6	5	4	3	2	1
36. 我對短訊廣告的**整體評價**是**正面**的。	7	6	5	4	3	2	1
37. 我接收手提電話廣告的**總體意向(intention)很高**。	7	6	5	4	3	2	1
38. 我會**考慮**繼續接收和閱讀手提電話廣告。	7	6	5	4	3	2	1
39. 將來我**會**繼續接收和閱讀短訊廣告。	7	6	5	4	3	2	1

其他資料

以下您所提供的資料將有助我們的分析，請您圈出最適合的答案。

1. 您的性別: a. 男 b. 女

2. 您的年齡:
a. 18 歲以下 b. 18-24 歲 c. 25-30 歲 d. 31-35 歲
e. 36-40 歲 f. 41-50 歲 g. 51-60 歲 h. 60 歲以上

3. 您的教育程度: a. 高中或以下 b. 大學或專業學院 c. 碩士或以上

4. 您的月入：
a. 5000 港元以下 b. 5001-10,000 港元 c. 10,001-15,000 港元
d. 15,001-20,000 港元 e. 20,000-25,000 港元 f. 25,000 港元以上

《問卷完畢，多謝合作》

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