SMS Advertising and Consumer Privacy: Analysis of Factors Affecting Consumer Willingness to send and Receive Information in Permission and Data based SMS advertising.

M. Siyavooshi  
PhD Candidate, Department of Management, University Of Isfahan, Isfahan, Iran

A. Sanayei  
Professor, Department of Management, University Of Isfahan, Isfahan, Iran

S. Fathi  
Assistant Professor, Department of Management, University Of Isfahan, Isfahan, Iran

Abstract
The increasing penetration rate of mobile phone, with specific characteristics of this medium, such as almost everywhere with the audience, has attracted companies' attention to it as an advertising channel. Mobile devices facilitate highly customized marketing communication in terms of person, time; location and context; so numbers of companies that use this medium for communicating with their customers are increasing. This fact that mobile is personal device and this is user rights to decide how to use it, on the one hand, and growing number of SMS advertising intrude consumers' mobile devices, on the other, has attracted consumers' rights advocators and public policy makers' attention to violation of consumer privacy by unwanted and unrelated SMS advertising that sent randomly to consumers' mobile numbers. So many countries have enacted laws that enforce companies to gain permission from users before sending SMS advertising. Recently in Iran, too, Communication Regulatory Authority has announced mobile operators must gain their subscriber's permission for sending SMS advertising. On the other hand, studies showed when SMS ads that sent to mobile devices are relevant, even if were sent without permission, would be less annoyance. Personalized advertising messages using a custom database are possible and common in some countries. But issue of collecting and maintenance of personal information without permission of consumers, through technologies such as GPS, Cookies, Scanner data...or through buying from companies that have such data, again raises the issue of privacy violations. Information gathered with subscribers' permission and satisfaction is a solution for this issue. Hence the present paper with review of studies in traditional business environments and e-Business environment, also performing four focus group
interview; designs a model for determining factors affecting consumers' willingness to receive information via SMS ads, and consumer willingness to provide information to receive personalized SMS advertising and based on proposed model testable hypotheses are proposed. Our hypothetical model propose that consumer trust to his/her mobile operator and trust to legal and executive infrastructures that safeguard from consumers against probable misuses is the first prerequisite for implementing permission-based and data-based mobile advertising.

**Keywords:** SMS advertising, Consumer privacy concern, Permission-based advertising, Data-based advertising

1. *Introduction*

The rapid development of wireless communication technology has created new opportunities and challenges for both consumers and marketers. Whereas in 1997 only 215 million people were using mobile communication devices worldwide [1] today, there are 5.9 billion mobile subscribers; that's 87 percent of the world population [2]. Advantages such as high rate of personalization, interactivity and low cost of reaching large audiences at the right time in the right place [3] has attracted attention of many companies to use this medium as a marketing tools, especially for promotion and advertising; so that global expenditure on mobile advertising is estimated at US $ 3.3 billion in 2011, growing to US $ 20.4 billion on 2015[2].

Despite this, one of the problems that mobile advertising has been encountered in recent years is invasion of consumer privacy. From user's point of view, invasion of privacy and general security concerns relating to wireless medium have been identified as one of the main obstacles to the success of wireless advertising, so that consumer concerns over privacy and invasiveness regarding wireless advertising could threaten the entire m-advertising market [4].

Reviews show that concerns about consumer privacy invasion, caused at least three trends:

- More legislation by governments and policy makers to protect users against unwanted ads. For example m-advertising in the EU area is regulated by law and involves asking end user's permission to send unsolicited marketing messages [4]. Recently in Iran, too, Communication Regulatory Authority has announced that mobile operators are required to allow from subscribers before sending all bulk messaging services in the form of information, news, advertising ....
- Harder regulation from governments side, affects firm's intention to use this media for advertising. Reference [5] showed that concerns about consumer privacy invasion have negative effect on management intention to use SMS advertising in multi-national companies.
- Consumer privacy concerns affects user's privacy protection responses which includes behaviors such as refusal to provide information or misrepresentation in transaction, negative word-of-mouth, complaining to companies or third-party organization (Son & Kim 2008, Cited in [6]).

Obviously, these trends could threaten attractiveness of mobile advertising industry in long term. So researchers, especially during the past decade, have developed and established norms associated with privacy ([7]: 7; [4]). These have been important norms to be follow in order to obtain successful campaigns, without advertisers suffering
from negative effects of consumer privacy violation. Two of the most important norms are general permission from consumers to send ads to them, and relevance of ads to the consumer.

Importance of permission, as a perquisite, to send successful mobile advertising, has approved in many researches, and several studies with aim of identifying factors that influence consumer intentions to give permission in many countries have been performed (e.g. [8], [9], [10], [3], [11], [12], [1], [13]...).

Role of ad relevancy in acceptance and attitude toward mobile advertising is also proven in several studies ([7]: 26). Reference [13] determined that consumers expect ads to be highly relevant in order to accept SMS ads. Reference [12] find that relevance of messages is the most influential factor for consumers to give permission to receive mobile ads. Relevance of ads is obtained by applying proper targeting or personalization of ads, and this is applicable when a rich database of consumers' information is available.

With emergence of the Internet and the wide acceptance of it, day to day, obtaining consumers' information is becoming easier and cheaper. This is due to that online transactions require consumers to leave information about themselves such as name, address and credit card number. This enables collection of data regarding consumers purchase behavior, demographics, etc. which is stored in database. This is true also in a mobile context, in which this kind of transactional information is generally possessed by mobile operators ([7]: 28). This information can be used for targeting and ad-personalization purposes. But not all consumers are comfortable with information about their browsing and purchase behavior etc. is being stored; and privacy concern might therefore rise again. So, to avoid from invasion of consumer privacy, collecting and storing consumers' information must be with consumer consent.

All studies about consumer intention to give permission for receiving mobile advertising were done in countries in which, firms are recipient of permission; and this permission are taken during interaction of consumer with the firm, through filling feedback forms, replying to company email, when buying…. Whereas, in Iran, the mobile operator is responsible for obtaining permission; and it is rational that factors affect mobile users to give permission, with those in other countries, necessarily, are not the same. One the other hand, although some studies about consumer intention to reveal information voluntary in traditional marketing environment and Internet marketing have been done, so far, no study has been conducted on this issue in the mobile environment.

Therefore, purpose of the present study is to fill this gap and to identify the factors that influence consumer willingness to receive and provide information in mobile advertising. The first objective of this study is to review earlier research about factors that influence consumer's intention to participate in permission-based and data-based m-advertising. Second, for deep understanding various aspects of these issues from Iranian users' view, several focus group interviews are conducted. Third, based on literature and analysis of focus group interviews, the authors propose a preliminary conceptual model of consumers' willingness to accept permission-based and data-based mobile advertising. The proposed conceptual model is expected to help researchers and managers to understanding critical components that affect consumers' willingness to give permission and provide information for
their mobile operators for marketing purposes.

2. LITERATURE REVIEW

2.1 Consumer Privacy Issues in Mobile Advertising: The right to privacy has a long history. Whereas Warren and Brandeis (1890) articulated the notion that privacy referred to "the right to be left alone" (cited in [14]), today after more than 120 years, there is no agreed on definition of privacy [15]. In fact, privacy is not a unified or singular concept but instead is a term that encompasses different dimension ([16], [14], [17]) including (1) the right to control information about one's self (information privacy); (2) the right to limit others’ access to a person's presence, body, or property (physical privacy, property rights); (3) the right to make decisions for oneself, without interference from others (decisional privacy or autonomy rights) [16].

Privacy concerns have featured as a major negative result of the information age ([18], [7]:22) and seem concerns about mobile advertising, falls into the first and second dimensions. The existing studies outline the following consumer privacy threats related with mobile commerce:
- Un solicited calls, SMS, MMS, or intrusive advertising on websites accessed through mobile devices ([7], [19], [12]).
- Collecting information about consumer profile and / or behavior without consumer consent ([15], [20], [19], [6])
- Incapacity to control the inclusion of personal or behavioral information in marketing databases ([19], [21], [22]).
- Using consumer information for other purposes than those explicitly accepted by consumers ([23], [19], [6])

Privacy concern has been found to directly or indirectly, through trust and perceived risk and perceive usefulness, negatively affect user's behavioral intention in a variety of contexts including intention to purchase in mobile marketing [24]. Provide information in database-driven relationship marketing ([17], [14], [22], [21]), adoption of location-based mobile services ([6], [16]) and permission to receive SMS advertisements ([12], [25], [11]). Therefore, companies and organizations working in the field of mobile advertising need to identify the solutions for eliminating or limiting consumer privacy concern. The studies show that there are two major solutions for reinforcing and respecting consumer's privacy: the development of voluntary codes of conduct by professional associations and the legislation developed and applied by government or supra-government institutions [19]. For example, Mobile Marketing Association has developed a Code of Conduct for players in the m-advertising industry which includes six principles, and the MMA has labeled it as the six C's of privacy:
1. Choice (mobile marketing is acceptable only to consumers that opt-in to receive it)
2. Control (consumers who opt-in must have any easy way to opt-out of all mobile marketing)
3. Constraint (consumers should be able to set limitations on messages received)
4. Customization (analytical segmentation tools will help advertises optimize message volume, ROI, and relevancy to the consumer)
5. Consideration (consumer must perceive value in any mobile marketing campaign)
6. Confidentiality (privacy policies must be aligned between the carrier and the brand) (Cited in [4]).

A study that conducted by HPI research on behalf of Nokia, on over 3,300 people in 11 key global market in June
identified four key factors contributing to mobile advertising's acceptance. These were: (1) choice (mobile advertising should allow users to decide whether or not to receive messages), (2) control (Users could bypass sales messages easily), (3) customization (users should be able to filter the messages received), (4) mutual benefit (users want to get something back) (Cited in [4]).

2.2 Consumer Privacy Issues in Database-based Advertising: Marketers' efforts to develop closer relationship with customers have led them to database as a tool to identify and serve customer needs. Reference [26], based on similarities in various definitions from database marketing in academic journals and popular business and marketing magazine, define it as a computerized data set of individual customer/prospective customer level data which might include demographic, geographic, psychographic and purchase behavior information, that can be used to build targeted, commercial relationships, improve the cost-effectiveness of marketing programs and/or stimulate sales/repeat purchases to improve profitability, and tracking and evaluating marketing programs. So database advertising can be defined as "designing and targeting advertising messages with using database information" that can be led to personalize advertising. Personalizes mobile advertising refers to sending advertising messages to mobile devices, based on user demographics (e.g. income), user preference (e.g. preferred product), context, (e.g. location and user activities) and content (e.g. brand name) factors (Xu,2007 Cited in [27]).

Consumer would like content of mobile ads to be customized to their interests and relevant for them. Nowadays, thanks to technologies such as internet, Credit Cards, Scanners' data, Global Positioning System (GPS)... collection and monitoring of customer information, and personalization of services, is very cheap and easy. Personal information in a digital format can be easily copied, transmitted, and integrated, which enables direct marketers to construct thorough descriptions of individuals. But trying to collect more personal data, regardless of the consequences, can lead to consumer privacy invasion.

In the database marketing context, the primary dimension of privacy that causes concern among costumers is information privacy [17]. Some of more privacy concerns in this context include sale of their data without permission, potential misuse of their private information, lack of control over the information presented, and errors.

As previously mentioned, these concerns tend to reduce consumer participation in direct marketing activities that requires information from customers. So, marketer needs to balance protecting costumers' privacy with having enough information to effectively meet consumer needs. Studies have shown that, people were less worried about data collection when they explicitly give permission to firms ([14], [21], [6]). Therefore in order to provide consumer-driven personalized services, firms must target consumer who are willing to provide information. All studies on factors affecting willingness to provide information, have been down in traditional and internet marketing environment. Although few studies have been down on factors affecting consumer privacy concern, when using a service that requires knowledge of mobile user data, including Location Based Services; no study of factors affecting mobile users' willingness to provide information, to receive personalized mobile advertising,
has been down. Whereas, reference [19] suggest that consumers’ attitudes regarding mobile privacy are strongly influenced by perceived benefits of mobile advertising, and an increased personalization of mobile advertising, which provides additional value to mobile customers, can significantly enhance mobile marketing adoption and use.

2.3 The Theoretical Basis
Note that permission based and database mobile advertising is a new idea (especially in Iran) and most users are not familiar with it, often regarded as an innovation and in related research, theories about innovation acceptance have been used for developing theoretical basis. On the other hand, because giving permission to send advertising and providing personal information for personalizing the ads involves formation of an exchange between mobile operator and mobile subscribers; for designing a comprehensive model, the exchange theories should also be considered. Among the related theories, four theoretical bases that can better explain our research issue are: Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Diffusion of Innovation Theory (DOI) and Social Contract Theory (SC), that each are briefly described in the following.

2.3.1 The Theory of Planned Behavior
The theory of planned behavior is an extension of the theory of reasoned action [28]. According to TPB, an individual’s performance of a certain behavior is determined by his or her intent to perform that behavior. Intent is itself informed by attitudes toward the behavior, subjective norms about engaging in the behavior, and perceived behavioral control. Attitude refers to an individual’s positive or negative evaluation about performing a particular behavior. Subjective norms refers to an individual's perceptions of other people's opinions on whether he or she should perform or not, a particular behavior , and perceived behavioral control refers to an individual's perceptions of the presence or absence of requisite resources, or opportunities necessary for performing a behavior (Ajzen & Madden 1986, Cited in [9]). As a general rule, the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual's intention to perform the behavior under consideration [28].

2.3.2 Technology Acceptance Model
Building on the theory of reasoned action model, Davis (1989) proposed the TAM in an effort to explain and predict the adoption and use of computer-based technology in workplace (Cited in [29]). TAM suggests that use adoption of new technology is determined by user's intention to use the system, which in turn is determined by user's beliefs about the system. Davis et.al (1989) identified two constructs namely perceived usefulness and perceived ease of use as major determinants of individual attitudes towards the use of technology (Cited in [9]).

2.3.3 Diffusion of Innovation Theory
This theory that introduced by Rogers in 1983 suggest that when a concept is perceived as new, the individual utilizes communication tactics within social systems to arrive at a decision point of either adoption or rejection of the innovation. He uses the term communication channel to describe how the message is communicated; at its most basic it is between an individual
who knows about an innovation and one who does not, at the other end of the spectrum is mass media communication channels ([30]:6). According to this theory, some attributes of innovation have affect in adoption of innovation. Although, features that introduced by Rogers include relative advantage, compatibility, complexity, trial ability and observe ability; however other scholars have augmented the list over the years, and added other attributes such as perceived cost and risk, communicability, profitability and social approval ([30]:9).

2.3.4 Social Contract Theory
Social contract theory provides a rational for the historically important notion that legitimate state authority must be derived from the consent of the governed (Macneil, 1974, 1980, Cited in [23]). This theory attempts to explain why rational and impartial people voluntarily give up their freedom of action in a natural state ("natural rights") to obtain the benefits provided by formation of social structures (Macneil, 1974, Cited in [23]). One of the main principles of SC theory is that norm-generating micro social contacts must be grounded in informed consent, buttressed by rights of exit and voice (Dunfee et.al 1999, Cited in [21]). Social contract theory from a marketing perspective focuses on the concept of exchange between the organization and the consumer. An organization offers society a benefit in exchange for the opportunity to make a profit (Donaldson 1982, Cited in [31]:6). Reference [32] first conceptualized advertising specifically as an implied social contract in direct marketing environment. They examined the relationship between the sender and the receiver of direct marketing advertisements and posited that consumers are willing to provide information about themselves to direct marketers in exchange for social or economic benefits. However, for this social contract to be perceived positively by consumer, the social or economic benefit must out weight the risk associated with providing personal information.

When mobile users give permission to receive ads or provide information in exchange for relevant services, they expect their rights to be respected by other side; this belief essentially reflects the concept of trust. Moreover, the behavioral consequences of information use should be governed by regulatory control mechanisms [23].

2.4 Previous studies
Several studies on consumer willingness to receive and accept advertising through mobile is doing, that we could benefit from their results in developing our model; but, as previously mentioned, no study has not been down about factors that influence the willingness of consumers to provide personal information for marketing purposes in mobile marketing environment. So in this context, the studies that have been done in traditional marketing and Internet marketing, we see. Moreover, the studies about consumer intention to accept those mobile services that require providing some of personal information (such as location based services), also are considered. In Table 1, some of these studies with the underlying theoretical framework and important results are summarized.
<table>
<thead>
<tr>
<th>Author(s) and year</th>
<th>Research title</th>
<th>Underlying theoretical framework</th>
<th>Main finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhou (2012)</td>
<td>Examining location-based services usage from the perspectives of unified theory of acceptance and use of technology and privacy risk</td>
<td>Unified Theory of Acceptance and Use of Technology (UTAUT) and privacy risk</td>
<td>Performance expectancy, social influence and facilitating conditions affect usage intention. Privacy concern affects perceived risk and trust, both of which predict usage intention; consumers are worry about the negative outcomes associated with information disclosure, such as information abuse and sales without their knowledge; Trust affects perceived risk.</td>
</tr>
<tr>
<td>Zabadi, Shura &amp; Elsayed (2012)</td>
<td>Consumer attitudes toward SMS advertising among Jordanian users</td>
<td>Technology acceptance theory, theory of reasoned action, Fishbein attitude theory</td>
<td>Consumer's perceptions of the entertainment value, In formativeness and credibility of SMS ads are positively correlated to consumer's overall attitudes towards SMS ads; consumer's perceptions of the irritation aspect of SMS advertisements is negatively correlated with consumers' attitudes towards SMS advertisements.</td>
</tr>
<tr>
<td>Ranjbarian, Garibpoor &amp; Lari (2012)</td>
<td>Attitude toward SMS advertising and derived behavioral intention, an empirical study using TPB(SEM method)</td>
<td>Theory of planned behavior</td>
<td>Consumers’ perception about entertainingness, irritability, credibility, and opportunity creating of SMS ads, affects their attitude toward SMS ads. Subjective norms and consumers' perceived behavioral control affect consumers’ attitude toward and intention to receive SMS ads. Consumers’ attitudes toward SMS advertising affects their intentions to receive SMS ads.</td>
</tr>
<tr>
<td>Saadeghvaziri &amp; Hossein (2011)</td>
<td>Mobile advertising: An investigation of factors creating positive attitude in Iranian customers</td>
<td>Fishbein attitude theory</td>
<td>Personalization, in formativeness, irritation, credibility, entertainment and also monetary benefit of mobile advertising are influential in developing positive attitude toward mobile advertising.</td>
</tr>
<tr>
<td>Hoong (2011)</td>
<td>Consumer’s permission in mobile advertising</td>
<td>Acceptance of mobile advertising, acceptance of mobile marketing, attributes of mobile commerce</td>
<td>Easy opt-in and opt-out, ability to filter and set limitation, brand reputation, trust, attractive rewards and consumer privacy concern affect consumer willingness to give permission to receive mobile advertising.</td>
</tr>
<tr>
<td>Ismail &amp; Razak (2011)</td>
<td>The determinant factors influencing young consumer's acceptance of mobile marketing in Malaysia</td>
<td>Theory of reasoned action</td>
<td>Attitude and subjective norm have a direct positive relationship with intention to use mobile marketing. Attitude was significantly influenced by perceived usefulness, perceived enjoyment and perceived image.</td>
</tr>
<tr>
<td>Jayawardhana, Kuckertz, Karjaluoto &amp; Kautonen (2009)</td>
<td>Antecedents to permission based mobile marketing: an initial examination</td>
<td>Embedded approach to analyzing trust and its sources</td>
<td>Personal trust, institutional trust, perceived control and experience of mobile marketing services are antecedents of permission. The main affecting consumers’ decision to participate in mobile marketing is institutional trust. Perceived control is an important determinant of permission for men, while is not so for women.</td>
</tr>
<tr>
<td>Gurău &amp; Ranchhod (2009)</td>
<td>Consumer privacy issues in mobile commerce: a comparative study of British, French and Romanian consumers</td>
<td>Theoretical framework developed by Altman (1975,1977) about consumer privacy within a network environment</td>
<td>Both country of origin (Due to differences in consumer perception of the legal structures governing and amount of unsolicited ads in each country) and the personal profile of users are influencing their perception regarding privacy treats in the mobile commerce environment, as well as the privacy protection strategy they adopt.</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
<td>Theory/Model</td>
<td>Summary</td>
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</tr>
<tr>
<td>Okazaki, Li &amp; Hirose (2009)</td>
<td>Consumer privacy concerns and preference for degree of regulatory control</td>
<td>Social contract theory</td>
<td>Mobile users with prior negative experience with information disclosure possess elevated privacy concerns and perceive stronger risk, which leads them to prefer stricter regulatory controls in mobile advertising. Both perceived ubiquity and sensitivity of the information request further the negative impact of privacy concern on trust.</td>
</tr>
<tr>
<td>Hong, Thong, Moon, &amp; Tam (2008)</td>
<td>Understanding the behavior of mobile data services consumers</td>
<td>The decomposed theory of planned behavior</td>
<td>Attitude, social influence, media influence, perceived mobility, and perceived monetary value influence consumers' intention to continue usage of mobile data services. Perceived ease of use, perceived usefulness, and perceived enjoyment influence attitude toward continued usage of mobile data services.</td>
</tr>
<tr>
<td>Shen and Chen (2008)</td>
<td>An empirical study of what drives consumers to use mobile advertising in China</td>
<td>Technology acceptance model</td>
<td>In formativeness, entertainment and credibility of advertising information are the most important factors that influencing the consumers' acceptance of mobile advertising. Existing knowledge, perceived usefulness and perceived ease of use also have positive effect on consumers' usage intention. Perceived risk and irritation of the advertising information have negative effect on consumers' usage intention.</td>
</tr>
<tr>
<td>Merisavo, Kajalo, Karjaluto, Virtanen, Salmenkivi, Raulas &amp; Leppäniemi (2007)</td>
<td>An experimental study of drivers of consumer acceptance of mobile advertising</td>
<td>Previous researches on consumer acceptance of mobile advertising</td>
<td>Among five drivers of mobile advertising acceptance including utility, context, control, sacrifice, and trust, utility and context are the strongest positive drivers, while sacrifice is negatively related to the acceptance of mobile advertising. Despite the concerns about privacy, results indicate that control and trust are not that important to consumers in mobile advertising.</td>
</tr>
<tr>
<td>Muk (2007)</td>
<td>Cultural influences on adoption of SMS advertising: A study of American and Taiwanese consumers</td>
<td>Theory of reasoned action, innovation diffusion theory</td>
<td>American consumers’ decisions on accepting SMS ads via their mobile phones are solely based on attitudinal considerations, whereas Taiwanese consumers’ intentions to act are influenced by social norms as well as attitudinal factors.</td>
</tr>
<tr>
<td>Bhatti (2007)</td>
<td>Exploring factors influencing the adoption of mobile commerce</td>
<td>Technology acceptance model, theory of planned behavior, innovation diffusion theory</td>
<td>Empirical data from regression analysis reflects users ease of use influence behavioral intention to adopt mobile commerce. The majority of positive relationships between perceived ease of use, subjective norms, behavioral control and intention to adopt are supported by empirical data. Results also reveal that behavioral control and subjective norms influence perceived ease of use which affects then their adoption intention.</td>
</tr>
<tr>
<td>Awad &amp; Krishnan (2006)</td>
<td>The personalization privacy paradox: An empirical evaluation of information transparency and the willingness to be profiled online for the personalization</td>
<td>Utility maximization theory</td>
<td>Consumers who value information transparency features are less willing to be profiled online for personalized service and advertising. Perceived benefit of personalization affects the importance of previous privacy invasion, on that vary willingness. In the case of personalized service, where benefit is more apparent to consumers, previous privacy invasions are not significant, whereas in the case of personalized advertising, the benefit is less apparent and the risk of an intrusion is more...</td>
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</table>
3. Methodology and data

In order to get a more comprehensive view about consumer intention to give permission for receive mobile ads or provide information for marketing purposes in condition that mobile operator is permission receiver / information receiver, focus group interview was chosen as our research method. In qualitative data collection techniques, focus group interview has recently become popular among professional and experts from different field. The distinguishing feature of the focus group interview is the group dynamics, enabling the type and range of data collected to be deeper and richer.
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in nature due to the group’s social interaction ([15], [41]). Respondents must have aged between 16-45, have a mobile phone, be able to send and receive SMS, and have received mobile ad, since. One week before of conducting focus group interviews, invitation randomly was distributed between ordinary people of three municipal zones (1, 3, 8) of Shiraz city that represent three classes of high, medium and low income. With a short interview, person belonging to sample frame was determined; then invitation was given. Invitation was included information about time, place, day and date of the focus group; moreover it was written that the gifts are given to participants and travel costs are paid. People who were willing to participate must be registered during a specified time via sending a SMS to the number that was written in the invitation.

A total of four focus group interviews were conducted during a week. All four group interview were conducted by an experienced researcher and special attention was given to provide a relaxed atmosphere and thereby making discussion nondirective. At the beginning, after welcome and introducing, the facilitator began the session by introducing permission-based and data-based advertising. The interview was semi-structured; a questionnaire that contained general questions about age, sex, education, name of mobile operator, have received permission' message from their operators? If received, how respond to it? And if didn't received, when receive it how would response? Then in-depth focus group interview continued with a more profound discussion concerning positive and negative aspects of giving permission and what conditions must be provided to increase the satisfaction and likelihood of permission.

Next, the moderator stated that assume your mobile operator wants to implement data-based mobile advertising idea and needs to some your information. Then, session continued with discus about what information they give and what they don't give, and why; advantages of this plan and consumer concern about that; and what conditions must be provided to increase the satisfaction and likelihood of providing information. The focus group interviews lasted from 75 minutes to 100 minutes and were video-recorded with participant permission. After collecting the data from focus groups via video-recorder, analysis consisted of the following: transcribing, coding of the text, clustering instances together into categories, and analyzing categories in a narrative presentation.

3.1. Insight from focus group interviews
Altogether 38 persons participated in our interviews in four groups. Subscribers of two important mobile operators (Hamrah-e-Aval's and Irancell) were roughly equal in our focus groups and some of participants had two SIM card, one of each operator. Only one participant was subscriber of other mobile operators. Table 2 summarizes the characteristics of participants in each group and their answers the basic questions.
### TABLE 2. CHARACTERISTICS OF PARTICIPANTS IN EACH GROUP AND THEIR ANSWERS
#### THE BASIC QUESTIONS

<table>
<thead>
<tr>
<th>No. of focus group</th>
<th>Participant number</th>
<th>Gender</th>
<th>Education</th>
<th>The age range</th>
<th>have received 'permission' message from their operators</th>
<th>Didn’t receive 'permission' message from their operator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Diploma or less</td>
<td>has an academic degree</td>
<td>Total</td>
<td>Had gave permission</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>Male</td>
<td>5</td>
<td>7 3</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>Male</td>
<td>4</td>
<td>1 7</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>Male</td>
<td>5</td>
<td>2 8</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>5</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td>10</td>
<td>Male</td>
<td>5</td>
<td>4 6</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>Male</td>
<td>24</td>
<td>14 24</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>24</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- Positive aspects of giving permission: most of participant believed that SMS ads are informative. Awareness of new products and brands, discount stores, ceremonies and celebrations …is a most attractive aspect of giving permission. Attributes such as save time and money, entertainment, free from feeling alone, and doing some things readily, also mentioned as positive characteristics of SMS ads that cause persons to give permission. For example a participant said that
  "Very often due to busy work, I'm not aware of many things; for example, store chain discount on their goods, or remaindering ceremonies that may be I forget it, such as Samaritans celebrate,…it's very good for me"
Another participant said that:
  "Some of messages cause to do some things readily, I received a concert's SMS ad that I liked to go, very easy I could reserve place with telephone number that was included it."
- Negative aspects of giving permission: the first negative aspect of SMS ads that all of participant agree with it and said it with different sentence or when another participant stated that they confirmed it with a nod of the head was sending SMS ads in wrong time. Although appropriate time was different in the participant viewpoint; but all were agreed that the biggest problem that they have with SMS ads is time of sending. One of participants stated that:
  "Sometimes, these messages are sent at the wrong time and caused my wife doubts me"
Characteristics such as being unrelated, being repeated, prolonged, and filling Inbox, also are negative features that participants expressed in their views and experiences. For example a participant noted that:
  "Twice a day, I receive an SMS ad from … bank that say Let's Take Loan."
- Facilitating conditions: focus groups results show that possibility the choice of time and content of SMS ads is the most important condition that if be provided; people are more willing to give permission. Frequency of SMS ads, suitability of ad content with consumer activities and interest, and
considering the benefits to the subscribers also mentioned as prerequisite that could raise consumer willingness to give permission. For example one of participants stated that: "When permission's SMS ad is sent, should not be general, that you have to either accept or reject it, I'd like to be able to select what subjects I want to send for me and what I don’t want."

- Willingness to provide information and type of information that provide: All of the participants were willing to provide information. Although the amount of information that were willing to provide, was different among participants. One of participants said that: "In fact, they have much of our information; when you buy a SIM card, you give them a lot of your information."

- Most participants are willing to provide information related to their interests, fun and habits; but are not willing to provide information such as the exact location of residence, income, and bank account information.

- Factors that motivate information providing: Possibility of customization of advertising messages and getting rid of irrelevant SMS is the main motivation to provide information from the participant viewpoint. SMS received less, reliance on mobile operators, benefits of plan for subscribers, interest in SMS advertising and time saving, are another factors that motivate participant to provide information for data-based mobile advertising.

- Factors that are causing concern in providing information: from participants’ viewpoint, the main factors that make consumers skeptical to provide information is concern about misuse of provided information and lack of trust in mobile operator. Concerns about the disclosure of information, hacking the operator, lack of security in information storage system, lack of supervision, incorrect interpretation of the data, sharing personal information with other organizations, lack of information correcting possibility, privacy invasion, and use of personal information for other purposes, also were mentioned as participants concerns in providing information.

- Facilitating conditions: trust building in context of protection of personal information, and operator obligation to keep the information confidential and does not provide them to any other organization are conditions that participant believed that could facilitate information providing. Moreover, operator obligation to use information only for advertising purposes, free membership in the plan, giving discounts in calls, SMS or other cost in exchange of information providing, being able to change and updating information, and honesty of operator also are conditions that participant thought they could increase their willingness to provide information.

4. Constructs and identified relationships

According to the theories discussed, literature and focus group interviews, some of the constructs and relationships between them were identified that are described in the following.

- Attitude towards information exchange: According to TRA, attitudes towards a behavior" is a person's judgment that performs the behavior is good or bad, that he is in favor of or against performing behavior" (Ajzen& Fishbein, 1980, Cited in [9]). A person's attitude towards a behavior is determined by salient belief about the consequences of that behavior and evaluation of the desirability of the consequences [28]. Numerous studies
have proved that attitude is the most significant influence on intention to use and have significant direct relationship with behavioral intention [9]. Positive relationship between attitude and intention to accept/ to use mobile marketing or mobile advertising has been proven in several studies (e.g. [1], [36], [9]). Although, about relationship between attitude toward provide information and intention to provide information no study has not been done; but arguably, such a relationship can be predicted. Focus groups results also confirmed it, so that, although all participant were willing to provide information, but people with more positive attitude to data-based advertising were willing to provide more information. For example, words of one participant can approve this theme:

"It’s a very good idea, this will get rid of irrelevant messages, I'm willing to give any information; even information about my illness."

Therefore the following hypotheses are proposed:

H1a: There is a positive relationship between attitude toward and intention to give permission to receive information via mobile advertising.

H1b: There is a positive relationship between attitude toward and intention to provide personal information for data-base mobile advertising.

- Perceived risk: marketing literature conceptualizes perceived risk as beliefs about uncertainly and consequences [41]. Reference [23] identified perceived risk in mobile advertising as "the extent to which users are uncertain about the negative consequences of opening, reading or responding to mobile advertising". Review of the research literature shows in the context of giving permission to receive mobile ads, users mainly are concerns about receiving lots of mobile ads and loss of privacy, especially, interfere with daily activities [12]. But consumer’s concerns about providing information are broader; and mainly include concerns about selling / transferred data to third party, without permission ([39], [20]), misuse of personal data [39], data theft, and loss of privacy ([38], [22]). Research has shown that consumer behavior is strongly influenced by perception of the risk [1]. Reference [11] supported that perceived risk is negatively related to the acceptance of mobile advertising. Reference [1] also showed that the higher the risk perceived, the more negative the attitude toward mobile advertising.

Also, researches about intention to provide information, have proven the relationship between perceived risk and attitude towards, and intention to self-disclosure. Reference [21] showed that perceived risk has a negative effect on intention to reveal personal information in e-shopping. Research conducted by reference [22] also showed that consumer willingness to partake in online profiling, for personalized services, decreases with a higher level of general privacy concern. In traditional direct marketing environment, too, reference [14] showed that consumers, who were very concerned were significantly more than other consumers to believe there should be limits on how much information companies can collect from consumers; to believe it is wrong for companies to provide customer mailing lists to other companies or organizations; and to have requested that a company or organization remove their name from a mailing or telephone calling list. Also by analyzing the results of focus groups can be reached to a similar conclusion. Most people who have received
permission' message and their answer are negative and those who don't receive permission' message but noted that if received it, their answer is negative, perceived more risk about receiving SMS advertising. The experience that one of participant has mentioned and his response is notable: 
"If this message comes to me, I will not let... One time I was waiting for an important message, supposed the phone number of someone to send me, I was driving, when the message received I think it's one that I'm waiting it, I parked the car in the corner and looked at my cell phone. I was very angry when I saw the promotional SMS... Get SMS advertising makes people stay open his own." 

In context of this relationship in the case of willingness to provide information also can refer to the response of one participant for example: 
"I am not willing to give any information because I'm afraid of using them against myself."

So based on mentioned up, the following hypotheses are proposed:

**H2a:** Perceived risk of giving permission to receive mobile ads negatively affects mobile users' attitude toward giving permission.

**H2b:** Perceived risk of providing information for data-based mobile advertising negatively affects mobile users' attitude toward providing information.

• **Trust:** A great deal of the literature shows that trust and risk are two most salient beliefs in information privacy-related context [21] and function in tend to explain consumer behavior in uncertain environment [23]. Trust provides the foundation for a social contract; when parties engage in a contractual relationship, one party must assume that the other will take responsibility for its promises [23].

Trust reflects a positive expectation towards another party's future behavior (Kim et.al 2008 Cited in [6]). In our research, we define trust as" the degree to which people believe their mobile operator is dependable in context of giving permission to send mobile ads and provide personal information for personalizing mobile advertising".

Research shows that trust negatively affects perceived risk ([6], [5]) and positively affects intention to provide personal information ([21], [14], [17]). Although effect of trust on intention in giving permission is relatively weak, but again, consumers' trust in privacy and low regulating mobile advertising are positively related to their willingness to accept mobile advertising [3]. Statements such as I don’t provide information because I don’t trust, or if I have trust I will give my data, and so on; that were expressed by participants in focus groups also approved this. Therefore, it is reasonable to suggest that:

**H3a:** Consumers' trust to mobile operator in context of giving permission to receive mobile ads positively affects consumer intention to give permission.

**H3b:** Consumers' trust to mobile operator in context of providing information positively affects consumer intention to provide information.

**H4a:** Consumers' trust to mobile operator in context of giving permission to receive mobile ads negatively affects consumer perceived risk of giving permission.

**H4b:** Consumers' trust to mobile operator in context of providing information negatively affects consumer perceived risk of providing information.

Within the trust literature, several constructs emerge across studies that may be key in the development of the personal-organizational trust that is critical in a database-driven
relationship, and permission-based marketing. For example, reference [17] showed that there is a positive relationship between the reputation of company and trust, and the perception of dependability and trust, in database marketing. But in general it can be said that trust in mobile marketing has two basic components: "personal trust" and "institutional trust".

- Personal trust emerges either in personal interaction with the trustee (in this case mobile operator) or via information about the trustee's past behavior received from personally known sources [3] and includes three beliefs: ability, integrity and benevolence. Ability reflects that mobile operator have the necessary skills and knowledge to protect user's privacy; integrity reflects that mobile operator keep their promises and will not deceive users; and benevolence reflects that mobile operator concern users' interest, not just its own benefits [6].

- Institutional trust, on the other hand, reflect to the wider trust that the consumer has on the institutional environment, including legal, cultural and political institutions, civil societal organizations such as clubs and associations and the media; the sources of institutional regulation that provide safeguards against the misuse of consumer information and permission include national governments and trade associations [3].

Reference [3] study in Finland, Germany and the UK showed that the main factor affecting the consumers' decision to participate in mobile marketing is institutional trust, which is a significant factor in all three countries. Reference [10] in a survey in England, France and Germany, also reported that the level of risk associated with unapproved information collection about consumer's profile and behavior in the Romanian respondent is the highest and in the England respondent is the lowest. Romanian respondent explained that they are not satisfied with the level of privacy legislation enforcement, considering that many privacy abuses are not discovered or punished by state authorities, whereas 41.4 percent of English respondent associate no risk with personal information, but only because they trust level of state control on these activities. Also, some of the dialogue that was exchanged between the participants in focus groups indicated that such relationships can be considered. The following is one of them:

"Once time I have purchased a waiting song from my mobile operator, after some times, because my family and friend told me this song is not good, I was going to stop using it, but whatever I sent message to the number that was given, the service didn’t stop…"

"It's happened for me too, once I had opt in a service that it would be to send me elder sentences chosen once a day; and reduce the amount from my charge, but later instead one message in a day, two or three messages were sent to me, and have reduced my charge ...

"Well, It destroys trust and do not trust someone to participate in another services"

... "There is another issue in community, and that’s scam; sometimes the messages that come are not from the operator and I heard about some frauds in this context....."

Therefore on the base of all mentioned above following hypotheses are formulated:

H5a: Consumer’s personal trust to mobile operator positively affects consumer perceived trust in context of giving permission to receive mobile ads.
H5b: Consumer's personal trust to mobile operator positively affects consumer perceived trust in context of providing information.

H6a: Consumer's perceived institutional trust positively affects consumer perceived trust in context of giving permission to receive mobile ads.

H6b: Consumer's perceived institutional trust positively affects consumer perceived trust in context of providing information.

- Control provided is found to play a significant role in the context of business relation in form of contractual arrangements and self-enforcing safeguards (Bloqvist et.al Cited in [3]). Amount control that provided by mobile operator for its subscribers to control behavior and its consequences, could affect intention to give permission and provide information. If consumers perceive that they have control on number and content of SMS ads, they are more willing to give permission ([3], [25]). Reference [12] showed that, after the relevance of the SMS ad, the second most important variable for consumer to give permission was control over opt-in conditions. Reference [14] study also showed that in the e-shopping that are required some personal information, consumers' purchase decision affects by amount of information control they are given. The focus group discussions also confirmed the importance of the control in different words. Most participants noted that they like to have control on time, content, and frequency of advertising messages that are sent to them; in data providing context, also providing control on type of information that would be provided, possibility of data modifying, control over the use and disclosure of information to a third party are the most important control issues that participant are willing to provide them. Thus we hypothesized that:

H7a: Control provided in context of giving permission positively affects consumer intention to give permission to receive mobile ads.

H7b: Control provided in context of providing information positively affects consumer intention to provide information.

- Subjective norms: A persons' subjective norm is determined by his or her perception that social referents think he/she should or should not perform a particular behavior (Ajzen & Fishbein 1980 Cited in [29]). Referent sources range from individuals with whom the consumer has close relationship (e.g. peers, family members, superiors, colleagues) to popular mass media (e.g. newspapers, magazines, television, commercials) [35]. There is a significant body of theoretical and empirical evidence regarding the importance role of subjective norm on behavioral intention to accept mobile marketing and to use mobile data services (e.g. [9], [1], [36], [35], [30]). Although the influence of subjective norms on willingness to accept was not directly discussed in focus groups interviews, but some participant responses imply the effect of subjective norms on their decision making. Such as:

"I'll wait for others to do it, when I saw the result, I'll do it."

As a result, the following hypotheses are proposed:

H8a: There is a positive relationship between subjective norms about giving permission and consumer intention to give permission to receive mobile ads.

H8b: There is a positive relationship between subjective norms about providing information and consumer intention to provide information.
• Perceived usefulness: perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (Davis et al. 1989 Cited in [9]). Based on TAM, perceived usefulness is a major determinant of individual attitudes towards the use of technology. An individual evaluates the consequences of their behavior on the desirability of the perceived usefulness [29]. Therefore in the present study, usefulness refers to how consumers perceived that using permission based and data based mobile advertising will provide benefit to them in their daily lives. Although no studies about effect of perceived usefulness on attitude toward provide information were found; various studies have proved that there is positive relationship between perceived usefulness and attitude toward various aspects of mobile marketing, including mobile ads (e.g. [29], [1], [9]) and mobile data services [35]. This relationship can be interpreted from the results of focus groups. People who gave permission and those who told if receive permission message will permit, more advantages than others perceived for the promotional SMS. In context of providing information also, all participants were agreed that personalized SMS ads are usefulness and therefore were willing to provide some information. Therefore, we suggest that:

H9a: Perceived usefulness of giving permission positively affects consumer attitudes towards giving permission to receive mobile ads.

H9b: Perceived usefulness of providing information positively affects consumer attitudes towards providing information.

• Monetary incentives: people are interested in deriving some monetary benefit from direct marketing programs [32]. In a Nokia-sponsored survey, conducted by HPI Research Group, almost nine out of ten participants (86%) agree that there must be a trade-off for accepting advertisements on their mobile devices (Cited in [27]). Several studies show that incentives like free minutes on phone, free SMS/MMS, free games and ringtones to the mobile can be effective on consumer intention to receive mobile ads (e.g. [13], [27]). Effects of incentives in consumer intention to provide information also have been studied. Reference [14] study showed that consumer willingness to purchase merchandise from a marketer that requests personal information as part of exchange, will be greater if shopping benefits are offered in exchange for the information. Reference [32] study also showed that the most factors affects on consumer willingness to provide information that are used for direct mail purpose, is compensation (such as coupons, rebates, special offers). Focus group discussions also confirmed this effect; for example in context of giving permission, one of participant said that:

"Should not only think about their own interests, benefits should also be considered for the mobile users, for example in exchange my permission they give me some discount in my talking cost."

Hence we hypothesized that:

H10a: Providing monetary incentives positively affect consumer intention to give permission to receive mobile ads.

H10b: Providing monetary incentives positively affect consumer intention to provide information.

• Type of information requested: it is known that consumer reactions to privacy threats depend on the type of information requested [21]. All things being equal, releasing more sensitive information is perceived as more risky than releasing less sensitive information
Although the perceived sensitivity of information varies widely with individual differences, in general, financial data and personal identifiers are known to be viewed by consumers as more sensitive information; in contrast, at an aggregate level, life style characteristics and demographic and shopping / purchasing habits are considered as less sensitive by consumers than financial data and personal identifiers ([21], [14]). Studies showed that sensitivity of information requested affects consumer intention to reveal personal information (e.g. [21], [14], [38]). Type of information requested also is effective on perceived risk of providing information. Reference [21] study supported that a marketer's request for more sensitive information has a positive effect on risk beliefs. Reference [39] also showed that sensitive information induced stronger concern over self-disclosure. Most participants in our focus groups interviews also were more willing to provide information related to their interests, career, job, social activities and demographic characteristics; and not willing to provide information such as the exact location of residence, income, and bank account information. Thus the following hypotheses can be formulated:

H11: Type of information requested affects consumer intention to provide information. Specifically, consumer intention to provide information decrease with increased sensitivity of information.

And at the end it must be told that although since a study of the relationship between willingness to receive information and willingness to provide information has not been conducted, however, because of sending mobile ads without permission is illegal; even if personalized ads, as long as the audience do not give permission, implementation of data-based mobile advertising is impossible. On the other hand, analyzing the focus groups results showed that people who gave positive response to permission message and those who will give permission if they receive permission message, are more willing to participate in data based advertising. Also it seems logical that persons, who have willingness to receive information via mobile ads, are more interested to personalized mobile ads; and therefore are more willing to provide some personal information for personalization. Thus we hypothesized that:

H12: Consumer intention to give permission to receive mobile ads positively affects consumer intention to provide information.

5. Conceptual model
To summarize, various studies have found that consumer privacy concern can be questioned mobile advertising attractiveness and threaten the future of this industry; and as mentioned before, mobile advertising based on permission and database can be the proper solution for eliminating or reducing this concern.
Reviewing studies related to willingness to receive mobile ad and willingness to provide personal information for marketing purposes, in addition to results of focus group interviews show that there are several common factors that could affect both on willingness to receive information via mobile advertising, and willingness to provide personal information for personalization of mobile ads; Although the indicators of these factors may be somewhat different in each behavior. This information leads us to the development of our hypothetical model of willingness to give permission to receive mobile advertising and willingness to provide information for data-based mobile advertising. In the light of the literature-based discussion and results of the focus groups interviews, we propose that consumer willingness to participate in permission-based and data-based mobile advertising is based on several common factors as shown in figure 1.

6. Conclusions and future directions
Nowadays, acquiring permission from consumer for sending mobile advertising is a prerequisite for successful mobile advertising and a legal requirement in very countries, including Iran. Evidences shows that continuing the trend of sending unrelated mobile advertising without consumer permission, could harms to all activators in this industry. Mobile operators can acts as an interface between their subscribers and the advertising agencies or all firms that want to advertise via mobile; and with forming a database of their subscribers...
and utilizing from Data Mining applications, provide possibility of tailoring mobile advertising content with subscriber's futures and interests. Mobile operators in comparison with others have several advantages for formation such database; the first, some of subscribers' information are collected during registration of SIM card and are saved in mobile operators systems. The second, with GPS technology mobile operators have the ability to determine the geographical location of their subscribers at any time; and the third that is more important of others is that mobile subscribers prefer their mobile operators for providing personal data, because they feels safer with their operators than with an advertising agency or any other company [12].

Moreover statistics shows that profit margins of short message service of many operators on the world markets are plummeting and mobile operators in developed countries could run out of profit in the next two to four years if they do not change their business (Tellabs/ Analysis Mason, 2011 Cited in [2]). The formation a database of subscribers' information and providing data-based mobile advertising service can be a good way for acquiring more income for mobile operators; more satisfaction for subscribers due to receiving related ads; and more success for advertisers due to more precisely targeting their advertising. Mobile operators can begin with subscribers who gave positive response to permission message and their phone numbers are stored in mobile systems. With proper implementation of the project, when the benefits be clear for others, willingness to participate in permission and data-based mobile advertising will be more in others subscribers. Certainly advertisers are willing to pay more in exchange for more accurate targeting.

Moreover, based on literature review and analyzing results of focus group interviews, our hypothetical model propose that consumer trust to his/her mobile operator and trust to legal and executive infrastructures that safeguard from consumers against probable misuses is prerequisite for implementing permission-based and data-based mobile advertising. Obviously, our model should be further verified and tested with empirical data.

References


[17] D.D. Schoenbachler and G.L. Gordon, "Trust and customer willingness to provide information in


