



The Determinants of Consumers' Attitude towards Mobile Advertising –A Qualitative Study

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ABSTRACT:

The digital marketing literature has shown that there are various variables affecting attitude towards mobile advertising but there is a lack of in-depth qualitative studies in this field as researchers still resort to models and theories that already exist in the literature, let us cite as a reference the model of advertising on the web of Ducoffe (1996). However, these theories do not take into account the specificities of mobile phones and smartphones. Given the importance of this topic, especially during the period of COVID-19 (Modgil et al. 2021; Nugroho and Utomo, 2024; Kaban et al. 2024; Laila et al. 2024), this paper aims to investigate the determinants of consumer's attitude towards mobile advertising in Tunisia. Thus, we conducted a qualitative study of 15 individuals who use their mobile phones on a regular basis for over 5 years. The results show that Irritation, Frequency, Creativity, Informativeness, Value and Credibility are variables that may affect the consumer's attitude towards mobile advertising in Tunisia.

Keywords: Mobile marketing, mobile advertising, attitude towards mobile advertising, attitude, qualitative study

Introduction:

The evolution of the number of mobile phones and smartphones sold worldwide is mainly explained by the trend of mobility of individuals. This mobility has created a need, among consumers and individuals in general, to own a mobile device that avoids barriers and constraints of space and time. This technology is considered as the most revolutionary technology in terms of emergence and adoption globally (Lechman, 2016).

Mobile phones, especially smartphones, have replaced not only landline phones, but also office and laptop computers. This is certainly due to the evolution of these devices and their operating systems which has considerably improved their technical capabilities as well as their ability to perform multiple tasks simultaneously. This evolution has boosted the use of smartphones as a lighter and easier to master alternative compared to computers (Armstrong et al., 2017; Medoff and Kaye, 2017).

The great importance of the mobile phone in the consumers' lives provides an opportunity for marketers seeking to reach consumers in an interactive, direct and personalized way (Wilken and Sinclair, 2009; Liu et al., 2012; Rohm et al., 2012; Azman et al. 2025; Isabell and Luqman, 2025). Indeed, considered as a revolutionary advertising communication channel, the smartphones offer several marketing tools such as SMS, Bluetooth, QR codes and in-app advertisements (Lamb et al., 2018).

Compared to the other communication channels such as television, mobile ads can reach consumers more effectively while spending much less money. This is why mobile advertising now appears as an element of the communication mix in the most recent literatures about marketing and advertising (Kotler and Keller, 2016). The introduction into the communication mix of the companies confirms the orientation of the marketing managers towards mobile advertising and digital marketing (Armstrong et al., 2017).

Initially, the results of the adoption of mobile advertising by businesses were not satisfactory and neither marketers nor consumers saw it as an effective mean (Karjaluo et al., 2004; O'Doherty et al., 2007). However, given the intensity of the emergence of mobile phones and smartphones in international markets, companies' spending on mobile advertising has multiplied several times between the years 2010 and 2019 (Statista, 2019).

Normally, the use of mobile advertising should be preceded by in-depth research to identify and study the determinants of consumers' attitude towards this new type of advertising as well as the factors that influence its acceptance and purchase intention (De Silva and Yan, 2017; Enwereuzor, 2017). However, instead of carrying out specific studies aimed at establishing a conceptual model explaining behavior towards mobile advertising that could be used in studies and researches in this area, researchers still resort to models and theories that already exist in the literature, let us cite as a reference the model of advertising on the web of Ducoffe (1996). However, these theories do not take into account the specificities of mobile phones and smartphones (Tsang et al., 2004; Xu, 2006; Keshtgary and Khajehpour, 2011; Ünal et al., 2011; Liu et al., 2012; Zabadi et al., 2012; Yang et al., 2013; Kim and Han, 2014).

On other axes, smartphones have several distinctive features and characteristics different from those of television, Internet and the other communication channels (Wang et al., 2004; Yan et al., 2004; Nysveen et al., 2005; Komulainen et al., 2007; Shankar and Hollinger, 2007; Xu et al., 2008; Gao et al., 2009; Hongcharu and Eiamkanchanalai, 2009; Danaher and Rossiter, 2011; Nielsen, 2014; Lalmas et al., 2015; Yin et al., 2017; ROIG, 2018). This is how several researchers in the field of mobile advertising have recommended carrying out in-depth qualitative studies in this field (De Silva and Yan, 2017; Enwereuzor, 2017).

Operationally, marketing managers must attach great importance to identifying the determinants of consumer attitude in order to make mobile advertisements that are not annoying and appreciated by consumers (Abdelkefi and Ben Brahim, 2015; Abdelkefi and Zouari, 2015). According to Belch and Belch (2018), mobile ads are relatively less expensive than ads through other communication channels. For these same authors, and because this channel is too personal and much more sensitive, marketers are advised to understand consumers' demands and attitudes towards mobile ads before serving this type of advertisements (Belch and Belch, 2018).

Therefore, in this study, we will try to fill the theoretical gaps, at least partially, by carrying out the necessary qualitative investigations in order to identify the determinants of the attitude of consumers towards mobile advertising. This will theoretically improve our understanding of attitude towards mobile advertising and its determinants. On a managerial level, our study will allow marketing managers to know the most important elements on which they must emphasize in order to send mobile advertising messages that will be appreciated by the target audience.

The qualitative study

The attitude of consumers towards advertising has been the subject of several studies since the 1990s, especially after Ducoffe (1995) published his paper which deals with the variables likely to influence the value of advertising in general. (Ducoffe, 1995; Wang et al., 2002; Bennett et al., 2006; Ling et al., 2010; Ogba et al., 2012).

Indeed, Ducoffe (1996) used the variables of his model about advertising in general (Ducoffe, 1995) namely: entertainment, informativeness, irritation and the value of advertising while adding another variable which is the attitude towards advertising on the web. Other researchers have added other variables such as "credibility", relying mainly on the studies carried out to study advertising in general or advertising on the web in particular (MacKenzie and Lutz, 1989; Brackett and Carr, 2001).

A significant amount of research in the field of web advertising which has used the studies of Ducoffe (1995), Ducoffe (1996) and Brackett and Carr (2001) has yielded positive results; which has encouraged researchers in the field of mobile advertising to use Ducoffe's (1996) model or other theories of technology adoption without making an effort to conduct a qualitative research in order to study the determinants of consumer's attitude towards mobile advertising and take into account the differences between the mobile phone and the other advertising channels (Enwereuzor, 2017).

Several researchers have concluded that advertising on mobile phones differs from advertising on mass media and that mobile advertising should be treated in a specific way since it is customizable (even individualizable), interactive, etc. (Wang et al., 2004; Yan et al., 2004; Nysveen et al., 2005; Komulainen et al., 2007; Shankar and Hollinger, 2007; Xu et al., 2008; Gao et al., 2009; Hongcharu and Eiamkanchanalai, 2009; Danaher and Rossiter, 2011; Nielsen, 2014; Lalmas et al., 2015; Yin et al., 2017; ROIG, 2018).

Carrying out a qualitative research to study the determinants of the attitude towards mobile advertising seems a necessity especially with the absence of in-depth studies in this area although the studies related to mobile advertising have started since the early 2000s (De Silva and Yan, 2017; Enwereuzor, 2017). At first, SMS advertising was the sole tool of mobile advertising, but afterwards several tools (Bluetooth, Qr Code, in-app ads, etc.) emerged in a short period of time, confirming the sensitive and unique nature of advertising via mobile phones (Lamb et al., 2018).

The mobile phone has several peculiarities and it is used to deal with multiple daily tasks. It represents "a mobile extension of the person" and therefore, mobile advertising cannot be treated in a similar way as the other types of advertising (Nielsen, 2014). Hence the need to carry out a qualitative study aimed at identifying the determinants of consumers' attitude towards mobile advertising in order to better understand the attitude of mobile users towards this type of advertising in order to improve it (De Silva and Yan, 2017).

The main objective of this study is to identify the determinants of the attitude of consumers towards mobile advertising in order to use them in future studies in the field of mobile advertising and to enrich the literature.

The second objective of this qualitative study is to help marketing managers who are planning to use mobile advertising in their communication mix; which requires a favorable attitude of the audience in order to accept this type of advertising (Abdelkefi, 2019). Marketers cannot focus on all the variables existing in the literature that have an influence on consumers' attitude towards mobile advertising. This is because the researchers used dozens of variables and relied on several theories and models of domains deemed to be similar to the field of mobile advertising (De Silva and Yan, 2017).

The research methodology

The research methodology used to perform the qualitative analysis allows us to answer the question: How do we get to know things? (Smyth and Morris, 2007).

It is appropriate at this stage to present the sample of our qualitative study, the mode of data collection and finally the methodology of the data analysis.

The sample

In order to get in-depth answers from respondents, we tried to choose people according to two initial criteria which are:

- Youth: We contacted people who are young, since most studies have shown that young people master the mobile phone much more than the elderly. For some researchers, people born after 1980 are “digital natives” and older people are “digital immigrants” (Prensky, 2001; Ahn & Jung, 2016).
- Use of smartphones: The more a person uses the smartphone, the more likely they are to receive or watch mobile advertisements. Subsequently, they developed a more advanced experience with this type of advertising; which allows us to have deeper and more developed answers.

We did not determine the size of the sample in advance, but rather we opted for the semantic saturation which consists in continuing the interviews until the $n + 1$ interview no longer brings new information and ideas. This phenomenon is defined by Mucchielli (1991) as the phenomenon which appears over time in qualitative research when the data that one collects is no longer new. All efforts to collect new information are therefore rendered useless (Rzem, 2013).

In our work, we reached the stage of semantic saturation after the 13th interview. However, to make sure that future interviews do not lead to better understanding and do not provide new information and ideas, we did two more interviews to reach 15 interviews in total.

To do this, we used a convenience sample. We tried to have as diverse a sample as possible in terms of the profile of respondents while respecting the selection criteria that we have already mentioned, namely: belonging to the category of “digital natives” and possession of a smartphone for at least 5 years.

All the interviewees have a university degree or are still students and their ages vary between 18 and 37 years old as shown in Table 1.

Table 1 : The interviewees in the qualitative study

Respondent	Age	Activity	Mobile experience
1	29	PhD candidate	12 years
2	37	Geography teacher	17 years
3	25	Photograph	10 years
4	22	Student	8 years
5	18	Student	5 years
6	30	Sales manager	18 years
7	30	Mechanical engineer	14 years
8	28	High school teacher	15 years
9	21	Student	9 years
10	26	Painter	11 years
11	19	Student	5 years
12	31	Computer sciences teacher	16 years
13	30	English teacher	14 years
14	30	Unemployed	17 years
15	33	French teacher	13 years

There are three main techniques that allow a qualitative study to be carried out, which are:

- Observations
- Focus groups
- Individual interviews

3.2.1) Observation

Observation is a useful collection method in descriptive-interpretive qualitative research (Corbière and Larivière, 2014). It is about observing and recording the behaviors of people in order to collect data in an observable way, especially when we seek to study the frequency, sequence and duration of observed behaviors (Given, 2008).

Observation is used in qualitative studies especially after data collection through individual interviews and focus groups. This makes it possible to establish a comparison between the theoretical information collected from the respondents and their when it comes to a real situation and therefore to check whether the responses and the behaviors of these people are identical or not (Alami et al., 2009). Observation is considered much more effective when used in conjunction with interviews. Therefore, in order to obtain a more complete view of the studied phenomenon and to have richer and more solid information, it is better to use observation with interviews (Given, 2008).

Indeed, the observation requires a lot of time and attention since one has to observe the people's behavior and take notes to extract the necessary information from the video recording and the observation with the naked eye. It also requires a cordial relationship between the person in charge of the observation and the participants to guarantee a certain level of trust allowing the latter to behave freely and spontaneously during the observation (Corbière and Larivière, 2014).

It is preferable to record the observations using several cameras from several angles to have maximum detail and information from the participants; which makes it possible to better understand the verbal and non-verbal behaviors of people. So, the richer the information the higher the value of the qualitative study becomes. This is why it is preferable to transcribe as many words and gestures as possible since the beginning of the observation (Shkedi, 2005).

Usually, the notes and remarks of those responsible for the observation are filed in a grid to build the reflective journal which encompasses all the details related to the observation, the time frame, the participants, the actions, the conversations and the interactions (Corbière and Larivière, 2014).

3.2.2) The focus group

The focus group also called group interview is an interview technique that involves bringing together six to twelve people with the meeting facilitator who is usually the person in charge of the study in a place in order to talk about a given topic as part of the qualitative study. This technique allows interaction and discussion between participants, which generates an exchange of ideas and opinions between them that revolve around a specific topic (Corbière and Larivière, 2014).

This is a very popular technique that is widely used in qualitative studies in the social sciences since the 1980s (Given, 2008). Focus groups combine the elements of individual interviews and observation as the facilitator defines the discussion points which may or may not be in the form of questions and he/she has the opportunity to observe participants' reactions, discussions and actions (Shkedi, 2005).

Focus groups are used especially in the case of emerging exploratory studies when the study subject does not yet exist in the literature or when the information available on the subject is limited. It is considered as a primary source of data since it allows to have developed and in-depth information from the respondents, which is not the case for individual interviews and observations (Shkedi, 2005; Given, 2008) .

The most important advantage of this data collection technique is that it allows to have a significant amount of data, interactions and information for a given topic in a rather limited period of time compared to other techniques. In addition, in order to moderate the focus group, the facilitator has to acquire specific qualifications in order to be able to control the smooth running of the interview and certain qualities such as objectivity, flexibility and empathy (Shkedi, 2005).

In many cases, the focus group is recorded either in audio only or in audio and video, which allows the facilitator to remain focused with the speech of the participants and the conduct of the interview since the main role of the facilitator is to supervise it so that the themes are neither repeated several times nor ignored by the participants (Given, 2008). Another person can assist the facilitator by taking care of the recording or to take notes concerning the nonverbal communication as well as to refine the questions and to encourage the participants to provide more in-depth opinions (Corbière and Larivière, 2014).

The composition of the focus groups should not be based on the demographic criteria chosen by the study leader or the researcher but rather on the homogeneity between the people so that they feel comfortable talking about the topic of the study and discussing with one another in a spontaneous way without being afraid of judgments (Given, 2008).

3.2.3) Individual interviews

One-to-one interviews is a data collection technique used in qualitative studies. This is a face-to-face, via a phone or a video call meeting between the researcher (or interviewer) and a single respondent (or interviewee) (Given, 2008).

This technique is considered as the most effective for studying the perceptions and getting an idea about their personal experiences with a specific topic. It is preferable to conduct individual face-to-face interviews if the interviewee is geographically close and accessible because they allow greater control over the conditions and environment of the interview and makes it possible for the interviewer to observe the reactions of the interviewees (Shkedi, 2005; Given, 2008).

Individual interviews make it possible to obtain responses from a larger number of respondents which can reach hundreds of people, whereas in the case of focus group, the number of participants is very limited (between six and twelve). This technique does not allow interaction since there is one person asking questions and defining research topics and another person answering the questions based on their opinion and personal experience (Given, 2008).

The interviewer should not be limited to asking questions and having answers, but should also prepare the questions and know the right time and the right way to ask them. The role of the interviewer is to help the interviewee respond by encouraging them to express themselves and communicate their ideas, which means that they must actively listen to the respondent and show their respect and attention (Corbière and Larivière, 2014).

At the beginning of the individual interview, the interviewer begins by introducing the research topic in order to explain to the respondents why they are invited to answer the questions. Usually, an interview guide is developed by the interviewer or the researcher and it covers all of the questions to be asked. These questions don't have to be long or complicated. It is also best not to use technical words. It is best for the interviewer to explain the questions when the respondent cannot fully understand them. Towards the end of the interview, the respondent can add ideas or develop their answers (Given, 2008).

There are three types of individual interviews which are:

- Unstructured interviews
- Semi-structured interviews
- Structured interviews

Unstructured interview:

Unstructured interviews are used in qualitative studies to collect data by asking open questions to the participants, which allows them to develop their ideas and to further explain their opinion and experience regarding the topic of the study (Firmin, 2008). Unstructured interviews are characterized by their flexibility since participants have a margin of freedom to express themselves (Lodico et al., 2010).

This type of one-to-one interview resembles a non-formal, friendly discussion in which questions are not prepared in advance but are asked during the conversation and following the discussion between the participant and the interviewer (Decher, 2017). The latter only prepares the main topic of the discussion as well as some important points that are part of the study. The conduct of the unstructured interview differs from an interview to another depending on the conversation between the interviewer and participants (Bryman, 2012).

With this type of interview, the interviewer starts by making the participant comfortable by speaking with him/her while being benevolent, then he/she starts asking vague questions so that the participant can have an idea about the main points of the topic (Firmin, 2008). During this period, the recording of the interview by the interviewer is not important since the respondents and the interviewer have not yet reached the core of the subject (Lodico et al., 2010).

It is important to mention that the interviewer in the case of an unstructured interview should let the participant speak without interruption and without trying to help them find the proper words. The facilitator shouldn't assist the participants and should let him/her use their own words and expressions freely and only speak when the interviewee finishes his/her idea or reaches a stage of silence in which he/she has nothing to add (Burgess, 2005).

According to Firmin (2008), the use of unstructured interviews is recommended in the following cases:

- Carrying out research on an emerging topic.
- When the initial aim of the study is to study a limited number of subjects in an in-depth manner (in-depth study).
- Ethnographic research aimed at better understanding the culture of the participants by carrying out an unstructured interview rather than asking specific questions.
- When the participants master the research topic, and in this case, it is better to let them speak in order to have a maximum amount of information.

Semi-structured interviews:

This is a qualitative data collection strategy in which the interviewer asks open questions to the participants. According to Ayres (2008), in the case of semi-structured interviews, the respondent can express himself/herself freely using his/her own expressions and words. However, there is little time constraint on each question since the interviewer has a list of questions and topics for which he/she is looking for answers.

Usually, the interviewer has an idea about the research topic and seeks to discuss with different respondents and participants in order to get more information and new ideas. When the respondent expands his/her response in an exaggerated manner and begins to deviate from the topic, the interviewer must intervene to redirect the participant so that the responses are not off topic (Decher, 2017).

In most cases, the interviewer prepares an interview guide in advance that includes specific questions or topics. The interview guide is generally flexible, which means that the researcher can respect the order of the questions and subjects that appear in the interview guide, or he/she can choose the questions without respecting the order but rather according to the respondent's responses and the conversation between them (Ayres, 2008).

The main objective of semi-structured interviews is to discuss the research themes with the interviewee who must answer the questions that appear in the interview guide. Thus, the development of the interview guide at this level is of great importance and it must be carried out with caution and precision on the part of the researcher or facilitator (Roche, 2009).

Compared to unstructured interviews, this type of interview is much more structured and carefully planned. The subjects, the questions and the duration of the interview are determined in advance by the researcher or the facilitator who plays a sensitive and more important role so that the participant remains well within the framework of the subject while leaving him/her a margin of freedom to express himself/herself and communicate his/her responses and ideas (Lodico et al., 2010; Corbière and Larivière, 2014).

As with unstructured interviews, the facilitator of a semi-structured interview should be benevolent. He must also know how to interpret respondents' answers and ideas and understand verbal and especially non-verbal information to extract as much information as possible from each person interviewed (Ayles, 2008).

Structured interviews:

The structured interviews, also called standardized, are characterized by well-organized questions determined by the researcher or the facilitator. These questions encompass all the information the researcher needs. This is why it is very rare for the researcher to add questions according to the answers of the interviewee, unlike semi-structured and unstructured interviews (Decher, 2017).

This type of interview is called a "standardized interview" because each respondent or participant receives the same questions in the same order regardless of the answers (Firmin, 2008). Thus, participants are invited to read and answer the questions as they are received on the questionnaire, choosing, in most cases, one or many answers from among several suggestions given by the researcher (Bryman, 2012).

In qualitative studies, it is rare for researchers to use structured interviews because they are characterized by low flexibility. In other words, when the interview is inflexible, the responses of the participants are less developed and the information received becomes limited. This justifies the fact that unstructured and semi-structured interviews are the most used to carry out qualitative studies (Lodico et al., 2010).

The three types of interviews presented above can be used in qualitative studies in the form of a continuum. So, the researcher can start his/her research or his exploratory study with unstructured interviews to explore the research topic in a primary phase, then, he/she can move on to semi-structured interviews in order to have more ideas and deepen knowledge about the themes. Finally, the researcher arrives at the stage of structured interviews, which provides precise answers to specific questions to fill the information gaps (Firmin, 2008).

According to Firmin (2008), directive interviews can be used to:

- Make a comparison between groups.
- Have an introduction to a quantitative study.
- Get answers from people who are shy or who have an intellectual disability and who are unable to develop ideas.

We summarize the characteristics of each type of individual interview in the following table 2:

Unstructured interviews	Semi-structured interviews	Structured interviews
Continuous speech	Speech by topic. The order can be more or less well determined according to the reactivity of the interviewee	Non-continuous speech that follows the order of the questions
Questions are not prepared in advance	Some questions are prepared and some are not (according to the discussion)	Questions prepared in advance and asked in a specific order
Very good quality information, but not necessarily relevant	Good quality, goal-oriented information	Partial and limited amount of information
Duration of information collection cannot be determined	Information collected within a reasonable period of time	Information collected quickly

In our qualitative study, we opted for semi-structured interviews as a data collection technique. This technique is the most appropriate to achieve our goals.

3.3) The data collection methodology

To conduct our semi-structured interviews, we have grouped all of the desired topics and questions into an interview guide.

3.3.1) *The interview guide*

The interview guide is a document prepared by the researcher or the interviewer as a support for conducting semi-structured interviews in order to have their questions answered (Morgan and Guevara, 2008). According to Howitt (2016), the interview guide is used in order to help the researcher or the interviewer.

The interview guide may contain general questions in order to get the interviewee talking, allow him/her to develop his/her ideas and share his/her knowledge and experience concerning the topic of study (Morgan and Guevara, 2008). It can also contain specific and precise questions to provide opinions and ideas on specific topics that may be overlooked by participants (Morgan and Guevara, 2008). The nature and manner of developing the questions and themes in the interview guide depends on the researcher and the nature of the qualitative study (Turner, 2010).

Usually, the researcher puts the questions in the interview guide, trying to group them by topic in order to facilitate the analysis of the data after the completion of the semi-structured interviews (Roche, 2009). Grouping by topic is not always possible in individual interviews because some questions may not be classified under the research topics of the interview guide. Likewise, it is impossible to ask all the possible questions concerning a topic because of the limited duration of the interviews which should not exceed two hours (Howitt, 2016).

In developing the interview guide, one should not neglect the early stage of the interview in which the researcher or interviewer tries to give the respondent more confidence, promoting the smooth running of the interview. This phase is of great importance for the interviewee to feel comfortable and to provide developed and informative responses (Rzem, 2013).

According to Roche (2009), the interview guide should include four phases, namely:

- The introductory phase: In which the interviewer presents the research topic in a clear and simple manner.
- The start of the interview phase: During this phase, the interviewer begins the interview in a sympathetic manner in order to put the respondent in a climate of trust.
- The response phase: This is the heart of the interview. During this phase, the interviewee answers questions from the interviewer who is trying to collect as much information and data as possible.
- The closing or concluding phase: Before ending the interview, the interviewer should make sure that the participant has no other information to add concerning the different questions.

When developing our interview guide (see appendix 1), we tried to focus on three themes, namely: (1) the type of mobile ads received by respondents, (2) the opinion of the latter about mobile ads and (3) participants' attitudes towards the mobile advertising they receive.

The type of mobile advertisements received:

There are several types of mobile advertising namely advertising via SMS, MMS, Bluetooth, WAP, QR code and via mobile apps and websites. So, the introduction of this theme aims to:

- Introduce the different types of mobile advertising to respondents and subsequently avoiding confusion between mobile advertising and advertising via other communication channels (online advertising, advertising via television, etc.).
- Explore the most popular and most used types of mobile advertising in Tunisia.

What consumers think about mobile advertising:

This topic includes questions related to participants' opinions regarding mobile advertisements received previously based on their personal experience. This topic will allow us to:

- Get an idea of the opinion of consumers about this type of advertising in Tunisia.
- Verify the existence of discrepancies between the opinions of the participants according to the personal experience or the type of mobile advertising.

The attitude of consumers towards advertisements via mobile phones and smartphones:

In this theme, we seek to study the attitude of each participant towards advertisements received via their mobile phones in order to:

- Investigate the determinants of consumers' attitude towards mobile advertising, which is the main objective of this study.
- Get an idea of the relativity of this attitude and if it changes depending on the type of mobile ads or other factors.

3.3.2) *Content analysis*

Julien (2008) defined content analysis as "a means to reduce the amount of data and to explain it. This is a commonly used method to analyze a wide range of textual data, including interview transcripts, recorded observations, accounts, responses to open-ended questions, speeches (...)".

According to Bardin (2007), there are two essential functions of content analysis namely the heuristic function and the proof administration function (İlin et al., 2017).

- The heuristic function: Through this function, qualitative content analysis "enriches exploratory trial and error, increases the propensity to discovery" (Bardin, 2007, p. 33) (cited by Ndayizamba, 2015, p. 87). The purpose of this function is to improve the knowledge of the researcher with the discovery of new elements, which favors the conception of hypotheses especially in exploratory studies (Dresch et al., 2015).

- The evidence administration function: The objective of this function is to prove or confirm the hypotheses using what exists in the literature (Dresch et al., 2015). Here we are looking for similarities and visions shared with other researchers (Ndayizamba, 2015).

The word heuristic is derived from the Greek word "heuriskein" (εὐρίσκειν) which means "to find" or "to discover" (Hiles, 2008). Since our qualitative study aims to identify the determinants of the attitude of consumers towards mobile advertising in Tunisia and since there are no studies that have explored these determinants, we can say that our study has an essentially heuristic role.

According to Ben Chouikha (2016), qualitative data analysis is the most widely used technique around the world to study interviews and qualitative observations. There are three types of qualitative data analysis namely: thematic analysis, lexical analysis and syntax analysis (Braga et al., 2018). However, in the field of management and marketing, thematic and lexical analyzes are the most used by researchers during qualitative studies (Ben Chouikha, 2016).

Thematic analysis:

Thematic analysis is a qualitative, descriptive and independent approach (Vaismoradi et al., 2013). It is defined as a method of identifying and analyzing themes from the data collected (Braun and Clarke, 2006). Thematic analysis provides researchers with the essential skills to conduct many forms of qualitative analysis (Vaismoradi et al., 2013).

In this case, the researcher analyzes the meaning of each participant's speech or response. During this step, the entire answer to a question or even a part of it is attributed to one of the themes designated by the researcher (Ben Chouikha, 2016).

Thematic analysis is based on coding which is defined as "transcribing, recording, categorizing or interpreting units of data analysis (words, speech, books, web pages, photographic images, etc.) (...) in order to be able to analyze them (Klenke, 2016, p. 98). In the literature, the authors distinguish between 3 types of coding which are:

- Open coding: It is intended to express data and phenomena in the form of concepts. To do this, the data are segmented and classified according to units, then the latter are classified according to the research themes (Klenke, 2016).
- Axial coding: Its purpose is to identify the relationships between the codes and categories defined during open coding, by adjusting the categories resulting from the open coding (Oliveira et al., 2013).
- Selective coding: This type of coding consists of identifying a main (or basic) category around which we can group the other categories already formed and define relationships between them (Oliveira et al., 2013).

To carry out the categorizations, Bardin (2007) proposes criteria (Oliveira et al., 2013; Rzem, 2013; Junior and Prata-Linhares, 2018) which are:

- Homogeneity: The units of analysis must be homogeneous.
- Mutual exclusion: The units of analysis should not belong to several categories.
- Relevance: The categories must belong to the context of the study and the themes.
- Objectivity: The same results obtained must be found by other researchers.
- Productivity: The results obtained must be rich in terms of ideas and information.

In our study, we used NVivo 12 software for thematic analysis of the content of our individual interviews. We performed the open coding technique available on this software. This technique makes it possible to classify the data (whole answers, sentences or even words) in nodes or even in sub-nodes (sub-categories) to finally have the data classified according to the desired research themes.

Lexical analysis:

Qualitative lexical analysis "aims to compare or analyze a textual corpus according to the characteristics of these descriptions, in the form of combinations of words, using descriptive and relational statistics" (Braga et al., 2018, p. 16). This type of analysis focuses on the frequency of appearance of words and linguistic redundancy in order to study the words and terms most used by participants during the conduct of the individual interviews (Ben Chouikha, 2016).

During the interviews, the choice of words by participants is not random. Each word used by the interviewees has complex meanings, which justifies the great importance of qualitative lexical analysis to study the reasoning behind the choice of words and terms by the interviewees (Hart, 2001). This also makes it possible to study the richness and nature of the vocabulary used by each respondent as well as by all the participants (Oliveira et al., 2013).

In our study, we used NVivo 12 software which allows qualitative lexical analysis through the technique of "Text Query" which calculates the frequency of occurrence of words for each topic. This technique will allow us to detect the words used by respondents for the three themes of our research in order to:

- Get an idea of the types of mobile ads received by participants and then study whether respondents' opinion and attitude towards these advertisements depend on the type of mobile ads.
- Analyze the existence of particular words that appear in the speech of the respondents when they talk about their opinion concerning the advertisements they receive on their mobile phone or their smartphone.
- Detect the determinants of consumers' attitude towards mobile advertising using the words and expressions used by participants and then examine the existence of similarities between them and measurement scales used in the literature.

NVivo 12 software also allows words to be associated with sub-themes or sub-categories and presents the frequency of occurrence of words for each respondent in graphs while placing each word in context by displaying the theme and the expression in which the word is used by each respondent.

Table 2 illustrates the difference between the thematic analysis and the lexical analysis in the context of a qualitative analysis:

Analysis type	Characteristics
Thematic analysis	Analyze the content of the interviews after coding the speech according to the themes
Lexical analysis	Analyze the content of the interviews based on the nature and richness of the vocabulary

3.3.3) Access to validity

In order to ensure the validity and reliability of the qualitative study, validation criteria must be respected, which are credibility (internal validity), reliability and transmissibility (external validity) (Coutelle, 2005; Ben Chouikha, 2016).

Credibility

Credibility, also called "internal validity", designates "the degree of concordance and assent which is established between the meaning given by the researcher, its plausibility and its relevance to the phenomenon studied" (Coutelle, 2005, p. 19). The credibility of the qualitative study strongly depends on the credibility of the researcher and the degree of his experience in the field of qualitative studies (Kubacki, and Rundle-Thiele, 2017).

There are several ways to ensure the credibility of the qualitative study, among which Coutelle (2005) mentions:

- The prolonged presence of the researcher.
- Achieving semantic saturation.
- The test of rival hypotheses.
- The use of control interviews to carry out validation by respondents.

Reliability

Reliability makes it possible to "ensure a logical argumentation based on results" (Coutelle, 2005, p. 19). It is all about answering the following question: Are we going to find the same results if we repeat our qualitative study? (Ben Chouikha, 2016).

According to Weber (1990), there are three types of reliability in the case of qualitative studies:

- Stability: The results found by the researcher must be stable and unchangeable over time. If the same researcher repeats the qualitative study another time, the analytical work should enable him/her to get the same results.
- Reproducibility: The realization of the same qualitative study by other researchers should lead to similar results while taking into account the cognitive differences between the researchers and the risk of error when recording and transcribing the interviews. This is why this type of reliability is not frequently used.
- Precision: It "refers to the extent to which the classification of the text corresponds to a standard" (Weber, 1990, p. 17). This type is used especially when there is a reference coding in the literature to which the work done by the researcher can be compared. Otherwise, we cannot use this type.

Transmissibility

Transmissibility, also called "external validity" concerns the possibility of generalizing and applying the study carried out to other fields or to similar contexts (Ben Chouikha, 2016). According to Lincoln and Guba (1985, p. 316), if results are obtained through a qualitative study in a field of research, transmissibility must "enable a person interested in a transfer (extrapolation) to conclude whether a transfer can be considered as a possibility".

According to Coutelle (2005), we can use means to ensure transmissibility such as:

- Replication of proposals to other cases.
- Theoretical sampling.
- The exhaustive identification of contextual data to estimate the kinship of contexts.

In the present work, we have tried as much as possible to ensure the validity of our qualitative approach by reaching semantic saturation, by trying to redo the coding a second time and by seeking expert advice. It should be noted that there is much debate about the usefulness of the validity and reliability of measurement scales in a qualitative study and that these terms should be used only in quantitative studies in which reliability and validity can be measured through quantifiable indices (Guba and Lincoln, 1981; Morse et al., 2002; Noble and Smith, 2015).

Section 2: The implementation and results of the qualitative study

At this point, we will explain the way in which we carried out the individual interviews and we will discuss the steps to follow. Then, we will present the results that we obtained through our qualitative study.

1) Conduct of interviews

We tried to follow an approach which respects the theoretical recommendations proposed by Carson et al. (2001), Fernández (2004), Gubrium et al. (2012) and Brinkmann (2013). The way of conducting semi-structured individual interviews was defined as follows:

- 1) Making contact with the interviewees
- 2) The duration and framework of the individual interview
- 3) Starting the interview
- 4) The progress of the interview and the follow-up guide
- 5) Synthesis and conclusion
- 6) The end of the interview

1.1) Making contact with the interviewees

In most quantitative studies, the primary purpose of sampling is to be representative of the overall population since the generally large number of respondents allows us to achieve this goal. However, in the case of qualitative studies, the number of participants is generally limited (Brinkmann, 2013). Thus, the choice of participants is made:

- Randomly: This method avoids systematic bias of the sample. It is the most used by researchers in the case of qualitative studies (Gubrium et al., 2012).

- According to an information-oriented selection: Using this method, we seek to maximize the amount of information to be extracted through the interviews. Thus, we try to choose individuals who have more experience in the field of study or who are likely to provide more information. In this case, the choice of the sample is considered according to previously determined criteria (Brinkmann, 2013).

In our study, we opted for an information-oriented sampling since our theme requires some knowledge in the field of smartphone usage to distinguish between the different types of advertisements received via this device.

The first contact with the participants was made on social networks (Facebook and Twitter). After posting a post with an overview of our study and a simplified explanation of the purpose of the interviews, we selected the people who best meet our requirements as outlined in the previous section from those who have shown an intention to be part of this qualitative study. Then, a phone call took place in order to set up appointments with them.

1.2) The framework and duration of the individual interview

The duration of face-to-face interviews should never exceed an hour and a half, so that the interviewer or researcher and the respondents are not tired due to the relatively intense mental effort (Gubrium et al., 2012; Guest et al., 2013). As for the minimum duration of semi-structured interviews, Johnson and Christensen (2014) argued that a duration of at least 30 minutes is appropriate in the case of qualitative in-depth individual interviews.

Usually, there is not a general rule about the exact number of minutes which is not of great importance in the case of individual interviews. The most important thing is that the interviewer asks all his/her questions and that the participant answers them, develops his/her ideas and gets enough time to say everything he/she wants to say without being pressed for time and without reaching a state of mental fatigue (Morrison et al., 2012).

In the literature, several researchers have conducted individual interviews of less than 30 minutes because of the short and poorly developed responses of the respondents (Newington and Metcalfe, 2014; Schäfer et al., 2014; Sharp et al., 2014; Jeragh-Alhaddad et al. 2015). Among the semi-structured individual interviews conducted by these researchers, we can find interviews that did not exceed 11 minutes. The duration of most of the interviews carried out was between 14 minutes and 43 minutes.

As part of our study, we informed participants that individual interviews should not exceed a maximum of one hour. Interviews did not end until participants answered all questions and no new information was generated. All the interviews were recorded using a tape recorder in order to be able to transcribe the content later.

1.3) The start of the interviews

In the beginning of the interviews, we introduced the purpose of the study to the participants. Next, we presented the key concepts of the study in a simple and clear manner while explaining the definition of the term "mobile advertising" and we showed them the different types of mobile advertising on a smartphone for better understanding.

The reassurance of participants is crucial to have honest and credible answers (Gubrium et al., 2012). It must be emphasized that there is no right and wrong answer since each participant has to talk about his/her personal experience which may be totally different from the experience of other people. This is important because we noticed that some participants, especially the younger ones, were afraid that they might be unable to add value to our study.

This step corresponds to the introductory and the start of the interview phase proposed by Roche (2009). It is sensitive since we do not know most of the participants which can constitute a blockage for them. That's why we tried to make each participant feel comfortable by asking them a few questions such as "How many phones or smartphones have you used? "And" What is the smartphone that you liked the most? ", Etc.

1.4) The progress of the interview and the follow-up guide

Since the individual interviews are semi-structured, the order of the questions in the interview guide has not always been respected and we have added questions that do not appear in the interview guide depending on the progress of the interview with each respondent. We tried to let the participants speak freely to get as much information as possible. After each topic, and sometimes after each answer, we proceeded to a summary reformulation.

During the interviews, there was often a back and forth between directivity and non-directivity, that is, when the participant has no other things to add in his/her answer and when he/she tries to deviate from the subject of study, we try to get them back to the main topic in a sympathetic way.

Carson (2001) recommends that, when performing semi-structured interviews, the interviewer should adhere to rules including:

- The use of respondents' words and terms instead of their own technical terms.
- Never interrupt a response.
- Do not influence the response of the interviewees.
- Encourage the respondent to speak and develop his/her ideas by saying for example "could you develop this idea?" Or "could you name some examples?".
- Try to keep eye contact with the respondent while smiling a little to reassure him/her.

1.5) Summary and conclusion

When there is only one question or two left, it is best to inform the participant that there are not too many questions left by using sentences such as: "this is the last question of the interview" or "There are only two questions left" (Ritchie & Lewis, 2003). This step becomes increasingly important when the duration of the interview exceeds the theoretical duration agreed with the participant.

Towards the end of the interview, a general summary should be made to give the participant a chance to add information (Ji et al., 2019). Sometimes the respondent forgets some ideas that are important. If so, the interviewee can say what they want to say about any topic or question before closing the interview (Ritchie & Lewis, 2003). Finally, the interviewer should make a conclusion to ensure that the interviewee has answered all of the questions while confirming their answers.

1.6) The end of the interview

As soon as the interview ends and the recording is stopped, it is important to thank the interviewee for his/her participation while reassuring him/her that his/her answers and ideas were important and that they will contribute to an improvement of the results and to a better understanding of the subject of study. The participant must also be reassured that his/her answers will remain anonymous, that his/her confidentiality will be respected and that the answers will not be shared for commercial purposes (Ritchie and Lewis, 2003).

The closing of the interview can be simple or complicated depending on the subject of study and the existence of other meetings envisaged, but in all cases, the interviewer must be polite and avoid any inappropriate behavior, especially when there will be no other meetings planned with the participant. Before leaving, it is preferable to pass a verbal goodbye (a simple "goodbye") or physical (a handshake for example) (Gubrium et al., 2012).

2) Presentation of the results of the qualitative study

After data collection, we made a transcription of the interviews from the recordings. We listened carefully to these recordings so that we could transcribe the conversations. Next, we used NVivo 12 software to perform the content analysis. In what follows, we will respectively present the different results obtained from the content analysis.

2.1) Types of mobile advertisements received

At the beginning of each individual interview, we showed few examples of each type of mobile advertising to the different respondents. Figure 1 includes some examples of mobile ads that we presented to the participants at the start of the one-on-one interviews.

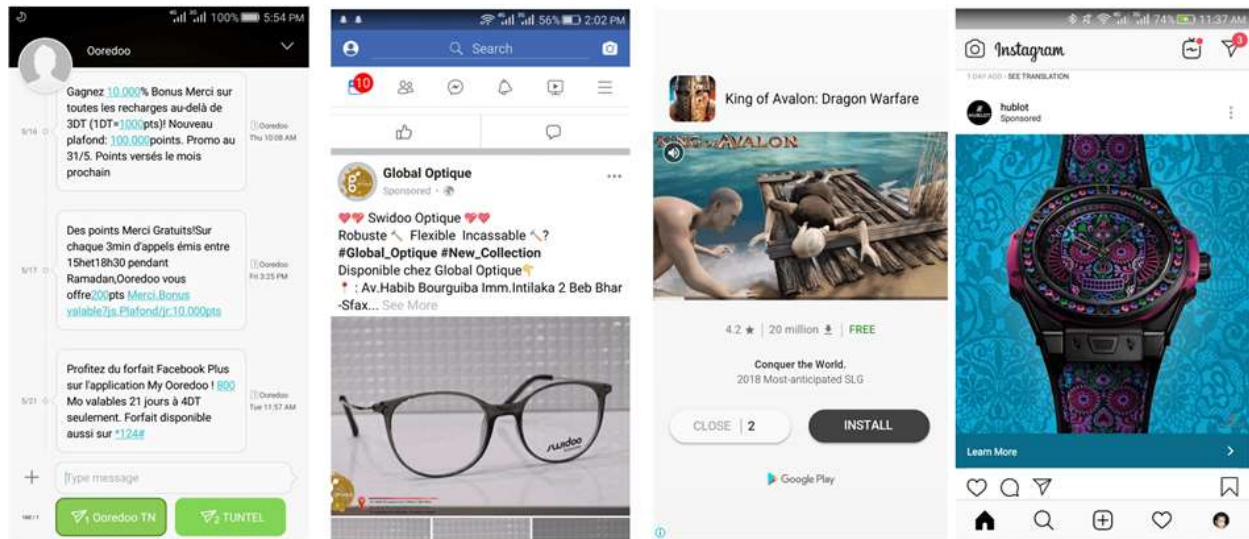


Figure 1 : Examples of mobile ads

Respondents' responses are presented in Table 1 below:

	Respondent 1	Respondent 2	Respondent 3	Respondent 4	Respondent 5	Respondent 6	Respondent 7	Respondent 8	Respondent 9	Respondent 10	Respondent 11	Respondent 12	Respondent 13	Respondent 14	Respondent 15
Integrated Ads	No	No	Yes	No	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	No
Pop-ups	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Banners	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
QR code	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WAP	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Bluetooth	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
MMS	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
SMS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

It should be noted that we did not provide respondents with a list of all types of mobile ads to choose the types received at least once. We just presented examples of each type of mobile advertising and asked participants to name the types of mobile ads received at least once. Some respondents forgot to name a few types of mobile ads at first, especially pop-up ads, but later they cited them while answering other questions.

This oversight can be explained by a confusion among respondents as to the difference between the banners that appear at the top or the bottom of the mobile web page or an application which are persistent unless one purchases the paid version of the application or uses a web browser that supports ad blockers, and pop-ups that can be closed immediately or after a few seconds using a close button (x) (Dong et al., 2017; Meyer et al., 2019).

We can notice that all the respondents received SMS-type mobile advertisements as well as banner advertisements which seems to be normal since these two types of advertisements are frequently used by advertisers worldwide (Nandagopal et al., 2012; Lin and Chen, 2015). However, no respondent ever had mobile MMS, Bluetooth, WAP or QR code ads. For these latter types of mobile ads, it should be noted that some respondents do not even know how they look like.

Table 14 below summarizes the number of respondents who received at least mobile ads by type of ad ranked in descending order.

Tableau 1 : The number of respondents who received mobile ads by type of ad

Type of ad	Number of respondents
SMS	15
Banners	15
Pop-ups	13
Integrated Ads	6
Bluetooth	0
QR Code	0
MMS	0
WAP	0

2.2) Respondents' opinions on mobile advertising

By talking to the respondents, we have tried to collect as much information as possible about the respondents' opinion of the advertisements they receive via mobile phones and smartphones. At the beginning we will present the opinion of the interviewees on mobile advertising in general and then we will analyze them according to the type of advertising to know if the opinion can vary according to the type of mobile advertising or not.

Some respondents expressed a purely negative opinion regarding mobile ads in general, among these opinions we can cite:

"When I get mobile ads, I feel nervous and tense." (Respondent 10)

"Most of the time I try to avoid mobile ads... In general, I find these ads not really useful, they are annoying." (Respondent 12)

"In my opinion, mobile ads are unnecessary and don't matter ... I don't want to receive these types of ads anymore." (Respondent 13)

"I am not interested in this type of advertising... Honestly, this type of advertising is disturbing." (Respondent 14)

Nevertheless, other respondents had somewhat more positive opinions. These participants revealed that mobile ads may be annoying but they are likely to have benefits for consumers, these respondents said:

"Mobile ads are sometimes beneficial." (Respondent 1)

"I think mobile ads are sometimes irritating... and sometimes interesting." (Respondent 2)

"Mobile ads are sometimes interesting." (Respondent 9)

Respondents, who had positive opinion of mobile ads, emphasized their importance and usefulness:

"In my opinion, nowadays mobile advertising has become very important and mandatory ... This advertising is taking hold on phones and we have to accept it." (Respondent 3)

"Mobile ads are useful." (Respondent 6)

This was the opinion of a few respondents regarding mobile advertising in general. However, these reviews may vary and depend on the type of mobile advertising. It should be mentioned that the respondents' responses only concern SMS advertising, banners, pop-ups and integrated advertisements since the interviewees have never had any mobile advertisements such as Bluetooth, QR code, MMS or WAP.

2.2.1) SMS

SMS advertising is the most widely used and popular type of mobile advertising around the world (Lin & Chen, 2015). Respondents spoke extensively about advertising text messages during the interviews. Indeed, some spoke of SMS advertising only generally, while others made a distinction between three types of SMS advertising namely:

- Advertisements received from phone operators.
- Advertisements received from companies that randomly send SMS or buy consumer databases.
- Advertisements received from stores and brands from which respondents have made purchases.

Talking about SMS advertising in general, we can notice some positive opinions in this regard, we quote some verbatims from respondents 1, 4 and 15 who said:

"I find useful information in most of the promotional text messages I receive ... I feel happy when I receive promotional text messages since I have the choice of reading them immediately or keeping them for later reading." (Respondent 1)

"I feel curious when I receive promotional text messages." (Respondent 4)

"... SMS ads are less annoying and I take my time to check them afterwards." (Respondent 15)

Respondents who have negative opinions about SMS advertising constitute a majority, this does not come as a surprise since most consumers, all over the world, have negative perceptions of this type of advertising (Ranjbarian et al., 2014). Thus, some respondents affirmed:

"Honestly, I don't like advertising SMS in Tunisia ... I have the impression that there is no Marketing effort to create a good advertising SMS campaign, it is almost copy/paste." (Respondent 2)

"I receive too many advertising texts daily and this frequency makes me uncomfortable ... When I receive too many SMS messages, I feel annoyed, I don't want to be bombarded with advertising SMS." (Respondent 3)

"It's annoying to receive a lot of mobile ads especially by SMS, I think these ads are unnecessary ..." (Respondent 7)

"I don't even read the promotional text messages; I keep them and then I delete them ... Text messages are a little irritating because you get them all the time." (Respondent 11)

"It's annoying to receive advertising SMS, period ... Now I no longer check the SMS I receive. I sometimes receive texts from my friends, but in my head, every SMS I receive is an advertising SMS, so I ignore them completely." (Respondent 12)

"It is also very irritating to sometimes receive texts very early during the summer holidays." (Respondent 13)

Several respondents expressed very negative opinions regarding the first and second type of SMS advertising, since, according to many of them, phone operators send too many advertising messages, especially for games and contests. On the other hand, receiving promotional text messages from companies from which respondents have never made purchases is considered unacceptable and inconvenient.

Speaking of messages received from phone operators, some respondents said:

"SMS advertising is too irritating, especially when it comes to games... I have never participated and I will never will, yet I continue to receive them every day with a high frequency." (Respondent 5)

"The SMS advertising is disturbing, especially the daily messages from my operators." (Respondent 8)

"Most of the text messages I receive daily are irritating especially those from the telecom companies which send text messages anytime throughout the day, including scam messages." (Respondent 10)

"I feel a lack of credibility especially with Ooredoo's SMS messages regarding the cars and other giveaways." (Respondent 14)

Illegally buying databases by businesses and sending advertising text messages to people who may not be interested in the brand or product is a violation of privacy and affects the privacy of consumers. since it is a message sent to a personal number (Siyavooshi et al., 2013). Companies can collect data from their customers through loyalty cards while gaining their acceptance to receive mobile advertising messages via SMS (Leppäniemi and Karjaluoto, 2005; Siyavooshi et al., 2013).

The countries of the European Union sanction the violation of privacy according to Regulation (EU) 2016/679 which protects the personal data of citizens (Tikkinen-Piri et al., 2018). In Tunisia, the National Authority for the Protection of Personal Data, which was created by Organic Law No. 2004-63, receives complaints from citizens regarding violation of privacy including spamming by SMS. It provides Tunisians with a form to fill out when receiving advertising messages from companies that illegally collect citizens' phone numbers.

A draft organic law n ° 25/2018 relating to the protection of personal data, which awaits validation from the Tunisian Parliament, mentions that sending advertising messages by SMS constitutes a violation of privacy and personal data, and this in article 12 of the second chapter: "It is prohibited to use the processing of personal data for advertising or marketing purposes except with the consent of the person concerned" (DCAF, 2018, p. 4).

In our study, participants expressed a negative opinion of unsolicited advertising text messages received from companies that they had never purchased from. In this regard, respondents 7 and 12 affirmed:

"... I also get messages from Zen and Hamadi Abid, but I never bought things from them." (Respondent 7)

"I am a woman and I receive promotional text messages from men's stores that I have never visited. I did not give my number to these shops." (Respondent 12)

On the other hand, the opinion of respondents who receive advertising SMS from their favorite stores was positive according to the responses of participants:

"I like advertising SMS because I like to be informed of promotions and news from my favorite stores." (Respondent 4)

"The promotional text messages from my favorite stores are really interesting. Personally, I want to know what's new in these stores ... SMS advertising messages from these brands give me the information I'm looking for." (Respondent 6)

"When I give my number to stores to get a loyalty card ... I ask those stores to send me text messages so that I know about promotions and sales. In this case I don't feel irritated." (Respondent 10)

2.2.2) Banner ads and pop-ups

We presented the differences between banner ads and pop-ups with examples to respondents. However, many of them sometimes combine these two types of mobile advertising when responding, which is why we decided to tackle them together. For these two types of ads, most of the reviews were negative, especially for pop-ups although we did have some positive reviews. Among the advantages of banner ads and pop-ups we mention that they allow you to make a reminder, this is what respondents 1, 4 and 9 said:

"Banner ads are especially useful for recalling a site like Jumia ... I feel curious when I receive a banner ad or a pop-up ad ..." (Respondent 1)

"I also like banner ads when they display ads that are interesting to me, especially after doing a Google search, the banners I receive afterwards are related to my previous search ..." (Respondent 4)

"... these banners were useful to me at times because they informed me of the existence of offers and promotions on the Jumia site that I discovered through these banners ..." (Respondent 9)

For the negative reviews, it was mainly because of the space occupied by the banner ads on the phone screen and because of the wait time to be able to zap or close the pop-ups. We cite the example of respondents 1, 7, 10, 12 and 13:

"The banner ads are annoying, I get pissed off when I can't see the content of the website or app anymore because of these banners and pop-ups ..." (Respondent 1)

"Since the phone screen is small, it's really not easy to press the cross to close a banner ad ..." (Respondent 7)

"... it's also irritating when I'm browsing a website or using an app and I get a banner there because when you click, you're on other websites ... it's disturbing in an unacceptable way to ask us to wait 20 or 30 seconds before we can play a pop-up advertisement..." (Respondent 10)

"The pop-ups are too annoying ... I uninstalled dozens of apps because of the pop-up ads I was getting." (Respondent 12)

"I feel like there is too much repetition, sometimes I see the same banner ads for months." (Respondent 13)

2.2.3) Integrated advertisements

This type of advertising was the most popular among the types of mobile advertising received by interviewees in our qualitative study. Reviews from all respondents who received embedded social media ads were positive as they integrate with the app and do not present visual irritation to users. So, they are seen as creative and less irritating compared to other types of advertising.

In this regard, respondents 5, 7, 9 and 12 said:

"Ads on Instagram are too creative... the ad appears on the app itself and is part of the content. It becomes much less irritating. The fact that I find an ad popping up among posts when I browse Instagram makes me curious to check what it is" (Respondent 5)

"I think these mobile ads are useless unless they're creative like Instagram ads." (Respondent 7)

"The sponsored posts on Instagram or Facebook are informative and they aren't disturbing at all... I feel curious about the ads on Instagram or Facebook... I find these ads really cool." (Respondent 9)

"In the case of Instagram ads, I find it a great idea that the ad is presented in harmony with the flow of the app." (Respondent 12)

2.3) Determinants of attitude towards mobile advertising

In this section, we explore the determinants of consumer attitudes towards mobile advertising. We used lexical analysis to detect the frequency of occurrence of words and we compare the results obtained with what exists in the literature of mobile advertising and advertising in general to check if we can detect variables that are susceptible to affect consumers' attitudes towards mobile advertising (Larsson, 1993; Rosenberg et al., 2014).

We have consulted several works that we will mention as we go along presenting the variables in Chapter 4. Indeed, it is worth mentioning the considerable effort of De Silva and Yan (2017) who tried to present most of the variables used in the most popular and cited works in the field of mobile advertising and digital advertising. This article has helped us a lot and made our research work easier.

By performing the lexical analysis through NVivo 12 software and comparing the results to the literature, we were able to detect six variables that may affect consumers' attitudes towards mobile advertising.

We classify the variables in Table 15 in decreasing order according to the frequency of occurrence in the interviews:

Variable	Frequency	Number of respondents
Irritation	57	15
Frequency	41	14
Creativity	24	9
Informativeness	21	9
Value	19	11
Credibility	8	5

2.3.1) Irritation

Based on the content analysis of our qualitative study, irritation was the most common variable in interviews. All respondents mentioned that mobile ads, either in general or talking about a few types of mobile ads, are irritating and annoying. They mentioned this 57 times in the 15 individual interviews conducted. This means that respondents confirmed that in their opinion mobile ads are irritating an average of 3.8 times (almost 4 times) in each of their responses.

2.3.2) Frequency

Frequency is often associated with irritation by interviewees. Almost all participants (93%) expressed dissatisfaction with the number of mobile ads received which is rated as high in a short period. This is especially the case of SMS advertising from telephone operators and the case of pop-ups and banner ads in mobile websites and in applications. These respondents mentioned this variable 41 times, that is to say that the frequency is mentioned on average 3 times by the 14 interviewees who mentioned this variable.

2.3.3) Creativity

The majority of respondents mentioned that the mobile ads in Tunisia are not very creative and that the mobile advertising messages are repeated with minor changes. The only type of advertising that was creative, they said, was embedded social media advertising. In fact, more than half of the interviewees (60%) spoke of creativity in their responses with an average of 2.7 times (almost 3 times) by each of these interviewees.

2.3.4) Informativeness

Among the interviewees, 60% of the participants (9 people) insisted on the informative character of mobile advertising messages, especially concerning advertising SMS from their favorite stores. This is because they receive news about their offers and promotions that relate to products that may be of interest to them. However, banner ads sometimes provide new, relevant information according to some participants.

2.3.5) Value

This is about the usefulness and importance of mobile advertising in the opinion of respondents. Of the 15 interviewees, 11 participants (73%) spoke about the importance and usefulness (or otherwise) of mobile advertising either by type of mobile advertising or in general. There are differences among interviewees as to the perceived usefulness and importance of mobile advertising depending on their experience and the type of mobile advertising.

2.3.6) Credibility

Some respondents spoke of the lack of credibility of advertising messages, especially in the case of SMS games sent from telecommunications companies. These respondents insisted that these games are only a means of deducting money by telephone operators. One participant even spoke of a scam and that these operators take advantage of some illiterate citizens who do not understand the nature of these SMS games.

Conclusion

In this paper, we have conducted a qualitative study about the determinants of the consumer's attitude towards mobile advertising. The realization of the qualitative study was recommended by several researchers in order to study the attitude of consumers towards mobile advertising since the mobile phone has specificities that do not exist in other communication channels.

We conducted 15 semi-structured individual interviews, selecting our convenience sample according to two essential criteria: youth and mobile experience.

The choice of these two criteria is justified by the need to have as much information as possible from connoisseurs who master the technology in order to achieve relevant results making it possible to identify the determinants of consumers' attitude towards mobile advertising which is the main objective of this study.

The interviews were recorded with the approval of the participants. Then we did the transcription. In addition, we used NVivo 12 software to facilitate our work in analyzing qualitative data, to perform their coding and to perform thematic and lexical analyzes of the content of our interviews.

According to the results of our qualitative study, participants received only four out of eight types of mobile ads. The types of mobile advertising received by all respondents are: SMS advertising and banner ads in mobile websites and in apps. On the other hand, thirteen respondents received mobile advertisements in the form of a pop-up and only six interviewees received mobile advertisements integrated into the applications (especially on Facebook and Instagram).

Participants had differing views on mobile advertising. This discrepancy depends on the type of mobile advertising in question as well as their personal experience with this type of mobile advertising or with mobile advertising in general. In general, in-app ads were the most liked while banner ads and pop-ups were the least liked by our sample.

The lexical analysis and the literature review in the mobile advertising field as well as related fields such as advertising on social networks and online advertising, helped us identify the most frequent variables in the responses of participants in our qualitative study which were irritation, frequency, creativity, informativeness, value and credibility.

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