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Exploring the Impact of Different Sources Credibility on App Downloading Behavior: An ELM Perspective

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ABSTRACT

With the increasing of using smart phone, people began to use “App” in their daily life. While they need to download a specific type of App, the developer of the App will provide them an introductory page which describes the functionality of the App and contains statistical data. Besides, function of “your friend who has downloaded this App” is introduced to smart phone users. Therefore, many peripheral cues are listed in the page nowadays to persuade people to download. The purpose of this study is to understand whether peripheral cues in the introductory page can persuade people to download this App. In our study, we used ELM-based theory to explain the behavior of persuading.

The expected contribution of this study is to understand three peripheral cues would influence App credibility which influence attitude toward downloading. This study will provide advices to App developers to promote their strategies of business.

Keywords: App, Source credibility, Elaboration likelihood model, Mobile, Download.

INTRODUCTION

Nowadays, there're a lot of people using the mobile devices, such as smart phone, tablet, android wear and so on. Those devices make our life more convenient, and we can't live without it. According to the report of Statista, the number of smart phones sold to end user globally has been increasing. The number of smart phones sold globally is 967.78 million units. That means that about 20% people in the world have a smart phone. You can image that the market of mobile devices and its applications will keep thriving for many years. Smart phones must run the applications on a platform. The most common platforms are Android (Google) and iOS (Apple). We generally call the applications that run on mobile OS as “App” that can be downloaded in Apple Store and Google Play. While many Apps are free, developers of many other Apps charge users certain amount of money for downloading and using their products. “App Annie” which is an analytical website in mobile Apps demonstrates that iOS earns more than Android, whereas number of downloading in Android is higher than iOS.

Since Apps are dramatically increasing, many Apps are available for us. But how can we find the App that fits our demand? In addition to its functionality, all Apps in an App store will show their description, which describes their App's name, corporation/author's name, App's short description, and other statistics from App store, such as how many people have downloaded, how these people score this App, and leaving comments of the App. Many Apps have not been downloaded at all. Developers try their best to enrich the description provided in App store to persuade users to download their App. Besides dull description, we are more curious about other information provided by introductory page of the App. In fact, Google Play also provides “which of your friends have downloaded this as well” function to facilitate users to make a decision. Therefore, App downloading behavior can be viewed as a persuading process that App developers and App store try to make users believe that specific App is useful and worth to download.

However, past studies based on TRA or TPB theories to understand the App downloading behavior. We would like to argue that, to better understand such a process, persuading theories should be adopted, instead of TRA-based theories. Besides TRA-based theories, a theory called “Elaboration Likelihood Model” can be also used in forming attitude. ELM is much suitable for explaining the process of persuading message recipients because people are processing message according to their involvement.

We choose some Apps from various sources, such as BBS, blog, SNS, etc. Later, we may look at the App's short description and information provided by the App's developer. But there is a lot of information put on the App's introductory page. There is lots of information listing on here. Which part of the page will we see, and which won't? And which part of the page will affect us to download this App finally? According to the content provided by Google Play, there are number of installation/rating. But we don't use ratings in this study, because it looks like sampling. Not all users leave rating, and every App has similar rating symbol. Therefore, we discard rating stars and number of rating. Besides, system will hint you your friend has downloaded and even left a comment. You will see a name of corporation/author under App's name. We also want to know the difference payment method of the App. Also, expertise or previous experience may have difference between behaviors of downloading.

Therefore, the purposes of this study are indicated as below:

- (1) In order to understanding whether peripheral cues affect individual's attitude.
- (2) In order to understanding whether motivation to process information (free/paid) and ability to process information (expertise)

affect the impact of peripheral cues on attitudes.

LITERATURE REVIEW

Elaboration Likelihood Model (ELM)

Elaboration Likelihood Model (ELM) was proposed by Petty and Cacioppo (1986). This is an important theory about how message recipient will process. And ELM is a dual processing theory, it processes a message within two methods. It is usually applied in marketing or social psychology. ELM explains individual's attitude change and the process of persuasive communication. It can be classified by two "routes" (Figure 2-1). One is central route, the other is peripheral route. A route is a method used by message recipient to process, and the difference between two routes is the amount of thoughtful information processing as well as individual's elaboration degree (Petty and Cacioppo, 1986; Petty, et al., 1981).

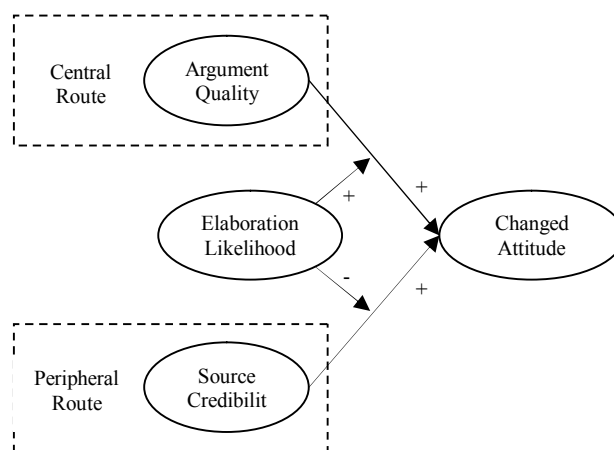


Figure 1: Elaboration likelihood model from Bhattacharjee (2006)

The person in central route tends to think carefully about issue-relevant arguments and the merits of information in a message to form their own opinion. In contrast, the person in peripheral route tends to use simple cues to evaluate to form their own opinion without cognitive thinking or scrutiny of the merits (Bhattacharjee and Sanford, 2006). In prior ELM research, the construct of argument quality represented the central route, whereas source credibility represented the peripheral route (Bhattacharjee and Sanford, 2006; Sussman and Siegal, 2003).

Argument quality means that the messages which are embedded with strong and persuasive arguments. If a person is in high elaboration likelihood, meaning that he/she has greater ability or motivation to elaborate the message. Further, he tends to choose central route to elaborate the message. As a result, argument quality will be more persuasive than peripheral cue in high elaboration.

On the other hand, source credibility means that the source of the message which is perceived to be believable, credible, and trustworthy. A person who is in low elaboration likelihood tends to use peripheral cues due to lack of the ability or motivation to scrutinize message to form their own attitude. That is, people in low elaboration will depend on peripheral cues. For example, an acquaintance endorses this message to ensure it is correct. Then people will depend on that cues to make a decision.

ELM originates from social psychology. It has been applied to many disciplines. For instance, Choi and Rifon (2002) figure out the relationship between web advertising credibility and consumer's attitude toward banner ads. Bhattacharjee and Sanford (2006) figure out that when IT is introducing into the organization, some people will refuse to accept, the executives of the organization must do some solutions such as providing some persuasive message to IT users to persuade them to accept. In the context of Electronic Health Record (EHR), Angst and Agarwal (2009) conduct a study for EHR users who have privacy concerns. In order to persuade them into using EHR, it has to send a persuasive message to the users.

RESEARCH FRAMEWORK AND HYPOTHESIS

Extending from Bhattacharjee and Sanford's model, we proposed a research model to figure out different factors in Google Play influencing App's credibility. Based on our research model, there are two types of information in message emerging. One is argument quality of message, the other is peripheral cue of message. And these two factors are read by message recipients to form an attitude to decide whether downloading the App. In the process, there are some Elaboration Likelihood factors intervening. In next section, we will figure out the relationships between variables. Figure 2 is the research model of this study.

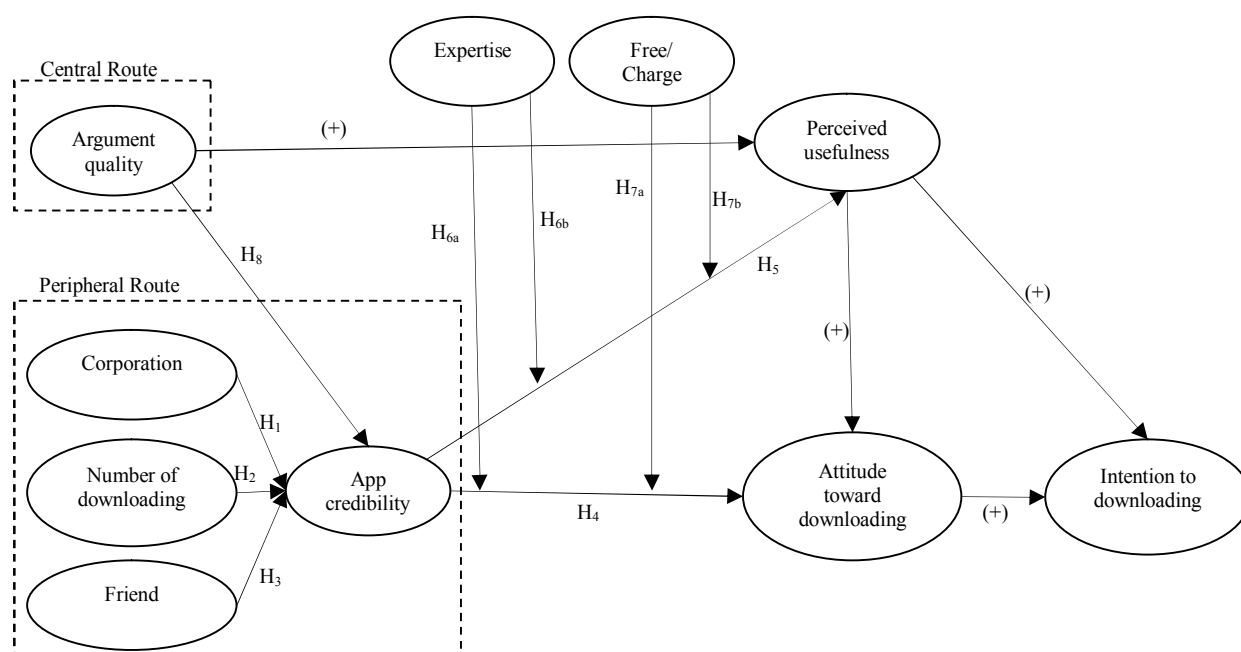


Figure 2: Research Model

Peripheral Route

Ohanian (1990) said, source credibility is a term commonly used to imply a communicator's positive characteristics that affect the receiver's acceptance of a message. Hovland and his associates (1953) analyzed the factors leading to the perceived credibility of the communicator and concluded that two factors - expertise and trustworthiness - underscore the concept of source credibility. From this study, many researchers are dedicated in the study of source credibility. Another popular study in source credibility is proposed by Ohanian (1990). He integrated Hovland's source-credibility model and McGuire's attractiveness model to propose three dimensions of source credibility. Ohanian suggested that source credibility could be classified into: (1) Attractiveness (2) Trustworthiness (3) Expertise. Source credibility in Elaboration Likelihood Model is determined by these three factors. There are three major information sources in Google play: developers, crowd, and friend. Individuals rely on those characteristics to determine whether the App is credible. Source credibility in mobile Apps should be replaced by App's credibility because individual is credible to the App instead of source of the App.

App is created by developers, developers might be a corporation or an individual. No matter what they are, they must have influence to affect the credibility of consumers (Goldberg and Hartwick, 1990; Goldsmith, et al., 2000; Lafferty and Goldsmith, 1999). Customers may infer higher quality and/or value when a service firm has a good reputation and thus, satisfaction should be positively associated with customer-based reputation (Oliver and DeSarbo, 1988). To maintain their reputation, famous developers or companies in general develop high quality software. That means while a corporation can deliver a good product to customers, customers will satisfy with good products and further form credibility of the corporation. As corporation is more credible than ever, its reputation will increase due to WOM. In general, a famous or capable corporation forms higher credibility than obscure or incapable corporation. As a result, a corporation has its expertise or domain knowledge to manufacture their products to make a difference between companies and let customers be loyal. In order to defend reputation of corporation, they will try their best to provide the most valuable product to consumers. Consequently, reputation of corporation seems to be more valuable to consumers. To sum up, reputation of corporation is replaced three dimensions (Expertise · Attractiveness · Trustworthiness) of source credibility. Corporations use their expertise to improve products. Furthermore, attracting consumers to make them trust products provided by its corporation. Therefore, we proposed the following hypothesis:

H1: Reputation of corporation positively affects App credibility.

Another important influence of App credibility is number of downloading in mobile Apps. Number of downloading is defined as "how much people have downloaded this App before". Imaging that if there are a lot of people have downloaded this App, we will be surprised since we ponder why so many people decide to download. Is this App so good that everyone wants to download? Actually, this situation seems to be attractive to you to think how good this App is. Also, the concept of number of downloading is similar to influence of majority. Some studies indicated that individual will agree that majority opinion is correct (Chaiken and Maheswaran, 1994; Giffin, 1967). When this App has downloaded by a lot of users, their perceived risk of buying this product will be declined. To sum up, number of downloading is replaced two dimensions (Attractiveness · Trustworthiness) of source credibility. While number of downloading is very high, we will be curious about this number. Many people have downloaded, the uncertainty will be lower. While the uncertainty is lower, we will further trust this product. As a result, we proposed the

following hypothesis:

H2: Number of downloading positively affects App's credibility.

Friendship is always viewed as an important influential factor to mankind. According to Brooks (1957), friends and acquaintances-those people to whom consumers talked every day-were the most influential sources in terms of opinions and subsequent behaviors, and interpersonal contacts provided the most effective form of Word-of-mouth. DeSarbo and Harshman (1985) also had similar concept to agree that friend and family were perceived to be more trustworthy than salespeople. Zimbardo (1960) demonstrated that if the communicator was the best friend of the recipient, the recipient would induce the greatest opinion change. Fisher, et al. (1979) suggested that from job applicant's point of view, it might mean that friends or favorite professors are credible source of information. Furthermore, friend can be regarded as implication of trustworthiness. Upon being conscious of appearance of friend on page of downloading, we have more confidence to download this App due to friend has downloaded. To sum up, friend is replaced three dimensions (Attractiveness ∙ Trustworthiness) of source credibility. When we notice our friends have downloaded this App, it is more attractive than other Apps. Further, we will trust this App more than other Apps due to friends. Therefore, we proposed the following hypothesis:

H3: Friend positively affects App's credibility.

Downloading an App is like a behavior of IT acceptance. According to Bhattacharjee and Sanford (2006), they proposed a model which combined TAM and ELM to be used in understanding influence process for IT acceptance. Most prior ELM researches focused on attitude as the dependent variable of interest (Lord, et al., 1995; Petty, et al., 1981). Peripheral cues such as App credibility are likely to influence attitude because such cues appeal to human affection rather than their rational judgment. These expectations lead us to propose:

H4: App credibility positively affects attitude toward downloading.

Besides, App credibility may sometimes directly influence users' perceived usefulness of downloading the App, particularly high App credibility's appearance. In this instance, potential users may substitute their own effortful thinking process with peripheral cues and employ a less effortful peripheral-route decision process to assess the potential usefulness of IT acceptance. Hence, we hypothesize:

H5: App credibility positively affects perceived usefulness.

ELM also posits that the effects of argument quality and App credibility are moderated by potential users' motivation and ability to elaborate on informational messages (Petty and Cacioppo, 1986).

Drawing on prior ELM research, we operationalize the motivation dimension of elaboration as "Free/Paid". "Free/Paid" is defined as the App is "free or paid". Ability is replaced with user's expertise in Bhattacharjee's study, which is defined as the individual's knowledge or previous experience in using mobile App in general. Users who perceive the same App as being less relevant to their problem or daily life are less motivated to engage in extensive elaboration, and may instead rely on peripheral cues such as App credibility for shaping their personal attitudes and usefulness perceptions of downloading the App. Hence, we proposed:

H6a: App credibility will have less impact on attitude toward downloading while the App is paid.

H6b: App credibility will have less impact on perceived usefulness while the App is paid.

User who is superior mobile App expertise obviates their need to examine peripheral cues, since they can form more accurate perceptions by critically examining the message content. In contrast, novice or less expert users are forced to rely on peripheral cues such as App credibility, rather than embedded message arguments, in framing their attitude and perceived usefulness perceptions. Hence, we propose:

H7a: App credibility will have less impact on attitude toward downloading while individual has expertise on mobile App.

H7b: App credibility will have less impact on perceived usefulness while individual has expertise on mobile App.

Besides, we considered that a description is more detailed, the products would be more trustworthy than others. Daft and Lengel (1983) proposed information richness theory. That describes the organization can improve our equivocality and uncertainty by using rich and abundant information. While uncertainty is getting lower, our trust in this product can be higher than ever. As information provided by developers is richer, it tells us how well this product is. As a result, we form an attitude which is credible toward this product. Conversely, our confidence will be lower if the information provided by developers is not abundant enough to tell us how well it is. Hence, we propose:

H8: Argument quality positively affects App credibility.

RESEARCH METHOD

In order to understand the different effects of reputation of corporation, number of downloading and friend on user's attitude toward downloading the App, we adopts online experimental methodology. We design several contexts to measure the relationship between three factors including reputation of corporation, number of downloading and friend and App credibility. Besides, we will investigate that how expertise of subjects and the App which is paid/free affect the relationships between three aforementioned factors and attitude toward downloading.

CONCLUSION

The main purpose of this study is to understand the impact of different sources credibility on downloading. Multiple sources are reputation of corporation, number of downloading and friend. These three sources will influence App credibility and further influence attitude toward downloading. Besides, we want to investigate the moderating effects on the relationship between App credibility and attitude toward downloading.

The results are expected to provide the following contributions for the academia. Many TRA-based theories instead of ELM are used to understand IT accepting behavior especially Apps. This study applied ELM to explain the persuasive effect in App field.

For practitioners, this study will provides advices to App developers to promote their strategies of business. App developers should take these factors we proposed into account.

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