# A Study of Influence Factors for Advertising on Messaging Applications Towards Mobile Buyer's Decision Making

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**Abstract**

The advancement of information technology leads to development of a new business paradigm which is focused on innovative technology. M-commerce seems to be a crucial tool to develop a country rapidly. The combination of messaging application features and business model can build start-up business driven by these technologies. However, the appropriate accessing target group of each business issues to be a main issue in the messaging application usage. This research aims to investigate the influence factors related to advertising on messaging applications. The Mixed method; quantitative and qualitative methods were implemented to investigate such factors. The findings are that three main factors, demographic factors, m-commerce factors, and behavioral factors, affected the buying decision making. Whereas, the demographic factor such as marital status showed no differences in this study. The products such as information technology accessories, beauty products and fashion goods are an important business area for customers focused on m-commerce. In addition, it was found that education had a significant effect towards advertising on messaging applications. Furthermore, the derived influence factors and criteria for advertising on messaging applications were confirmed with online merchants in the focused group method. The main advantage of messaging applications is the ability to interact with merchants and get quick responses. The results can be a guidance for start-up businesses for sustainable development.

*Keywords:* Social Networking; Mobile Commerce; Advertising;

## 1. Introduction

The paradigm shift of information technology, especially the internet, leads to more coverage of internet usage. The internet users have increased dramatically. In Thailand, the advancement of the internet can connect more than 50 million people rapidly [1]. This connection can build a lot of applications and distributions and useful content to users. The number of internet users is not only limited to computers but also mobile users. Since the next generation mobile network such as 4G, the number of mobile internet users has risen.

Consequently, the applications related to social networking have come up such as Facebook, Twitter andLINE. This kinds of application is becoming popular for mobile internet users because they can easily connect users to other users. In addition, users can send text messages including other types of multimedia such as pictures, videos, voices or document files. Therefore, it is the most important marketing channel to connect to consumers. Almost all merchants have to open digital channels like messaging in order to sell their products and services. LINE is the most popular messaging application in Thailand [2]. As a result, a lot of merchants including a new venture have tried to open this channel to access the large consumer group. The obvious benefits of this channel are reduction of storefront cost, less barrier to entry and 24/7 connection.

Thailand 4.0 is the national policy to move the country into the new industrial country which is focused on technological start-up business and driven by innovative technology. Mobile commerce is the one area that the new merchants in various industries should concentrate on. Hence, the mobile internet and messaging applications are the tools to drive the new business form and push the country to the correct direction.

However, the direction and guideline to access the channel is vague. Access to consumers with traditional marketing strategy is still needed but the advertising patterns should be changed otherwise the prospect customers may get a negative impression of the new virtual storefront. This leads to losing the opportunity to reach customers. Customers

would never come back again if the merchants cannot deliver an appropriate advertising strategy. This research aims to study the advertising on messaging application which encourages and affects mobile users' decision making towards buying through this kind of application. It also addresses the relationships between the influence factors for consumers and merchants.

## 2. Background

### 2.1. Mobile Commerce

The new paradigm of trading seems be moved to m-commerce. It has been accepted as a crucial tool for the new business model. Due to the advancement of mobile networking and smartphones technology, m-commerce popularity tends to increase dramatically. The study of m-commerce is not only focusing on factors towards m-commerce usage but also drilling down to relevant factors such as user experience and design [3]. Some research such as research by Mohammadpourand Taft Attempts to mitigate the weakness of m-commerce which is to ensemble the cloud-based solution into the layer of m-commerce model architecture [4]. Although m-commerce plays a vital role in the present, the traditional marketing mix such as advertising is needed with a new strategy. The diffusion of mobile technologies may impact consumers' perceptions. Therefore, the consumers' behavior and perceptions towards mobile advertising should be investigated. The study from Haghirian et al. was shown that mobile advertisements in areas of entertainment and informativeness have different relationships [5]. In addition to mobile advertising, the interaction between mobile phone users and recommended content is also important [6].

### 2.2. Social Networking

People in the society need to be connected. They exchange many information such as comments or reviews of bought products and services. The connection can expand to many people in the society. This is called "Social Networking". Information technology links social networking with its application such as Facebook and LINE. Hence, people can use this application to connect through social networking conveniently.

Different people have different purposes to use social networking [7]. It was found that the purposes of social networking application usage are for entertainment, dating, personal message and sharing pictures or videos respectively. The beginning of this usage is focused on websites. It is the channel to share similar interest in the group including comments and spread out through the social networking. With the advancement of mobile internet, social networking plays a vital role in mobile commerce.

In addition, the proportion of social networking users in Thailand is about 47% male and 53% female. [8]. More than 65% of users are between 18-34 years old. Social networking is an important channel for e-business and e-commerce including mobile commerce (m-commerce) to grow the business because the strength is accessing the target group immediately and efficiently. The business can choose a specific target group based on social networking with "word of mouth" to increase business reliability and trustworthiness with advertising [9].

However, [10] proposed the research in the terms of the economic factor. It is mentioned that although m-commerce made people more convenient, there are differences in demographic factors such as gender, occupation, age, income or behavioral factors such as preferences and interests. These factors affect decision making for buying and should be considered to m-commerce.

### 2.3. Advertising on Social Networking

Due to the cultural transformation, the population of mobile internet users has increased rapidly. The activities on the internet have changed people's lifestyle. For example, many people connect together through messaging applications using video call or exchanging pictures or document files. This includes online buying products and services.

Online advertising has become popular. Many researchers are focusing on this advertising channel. The online channel can send messages to the target group directly. Some advertisements applied mobile user behavior to show advertising with the user's preferences websites and combined content which gained opportunities for the user's next purchase. Furthermore, the research by Balabanis and Vassileiou [11] showed that customers usually search product's information before they make a decision to buy the products or services. This is to reduce the risk or uncertainty of buying products or services.

Moreover, online advertising can increase products 'image towards consumers' trustworthiness because the advertising includes pictures or videos which encourage participants to gain more understanding about products and services [12-14]. Online advertising affects brand awareness. Therefore, good online advertising leads to urgent customer's interest efficiently. It can be seen that appropriate online advertising combined with message application can affect decision making of mobile internet users towards products and services buying.
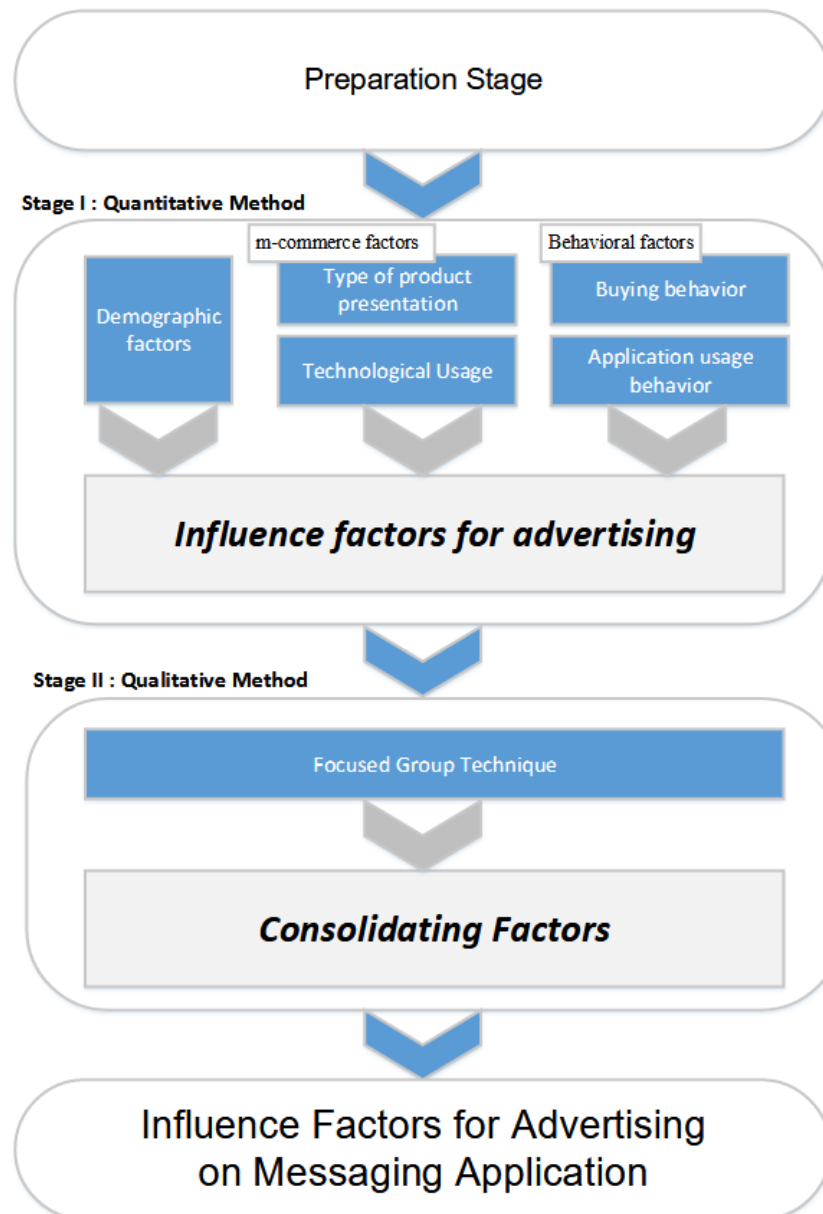
## 3. Method



**Figure. 1.** The framework of the study of influence factors for advertising on messaging application

The research methodology used in this research is a mixed method. There are two main stages as follows:

Before the first stage had begun, the preparation of the sample selection and instruments were implemented in the research. The experts were chosen by specific purposes using criteria such as mobile internet usage and m-commerce experience. The comments from experts were collected to create the questionnaire for the next stage.

The first stage implemented a quantitative approach to find the influence factors. The stratified sampling was classified based on demographic factors. The sample size was equal to 100 mobile internet users and the data were collected by online survey. This stage divided the factors into three groups which are demographic factors, m-commerce factors and user's behavioral factors. Demographic factors concern gender, age, marital status,

occupation, education and income. M-commerce factors focus on type of product presentation and technological usage in the application. Behavioral factors refer to buying behavior and application usage behavior. The survey used an online questionnaire as mentioned to collect data regarding the consumer's factor. The questionnaire applied Likert's scale of 1 to 5 score to identify the meaning of the user 's attitude towards factors. The descriptive statistics have been used to analyze the surveyed data.

The second stage is related to qualitative study to investigate the influence factors related to advertising and m-commerce. The 6 online shops that use LINE @ application, the official account for merchants, as a main tool for their business, are invited to participate in the focused group. Their businesses are cosmetics, mobile phone accessories, and clothes.

## 4. Results

### 4.1. E-Commerce Factor

The surveyed data from samples were collected. After that, the mobile internet users opinions towards m-commerce factors were summarized. It appeared that the top criteria related to m-commerce factors is the ability to interact with merchants immediately. Users are likely to use messaging applications for shopping because it can interact and inquire with merchants and get responses immediately. This is similar to a user going to a real world storefront with a salesperson providing product details interactively. The top 5 criteria in m-commerce factors were shown in Table 1. From the surveyed data, it was observed that the minimum average score product care.

**Table. 1.** M-factor average score

| m-commerce factors | S.D. | Average score |
|---|---|---|
| Ability to interact with merchant immediately | 0.992 | 4.31 |
| The various presentation of pictures of product | 0.980 | 4.01 |
| Information and detail related to product | 1.025 | 4.00 |
| Promotion | 0.986 | 3.91 |
| Information related to product's reviews | 1.047 | 3.88 |

### 4.2. Demographic Factors and Buying Decision Making

The next factors from the survey data are related to buying decisions. This factor concerns gender, age, occupation, marital status and education. The results of top 5 criteria in each minor factor were shown as follow:

**Table. 2.** Gender factor for buying decision making

| Criteria | Male | Female | Sig. |
|---|---|---|---|
| Cost of travelling for shopping | 0.5625 | 0.6731 | 0.261 |
| The interaction with merchant | 0.4583 | 0.4423 | 0.874 |
| Price comparison | 0.3958 | 0.5385 | 0.156 |
| Cheaper price | 0.3542 | 0.4615 | 0.279 |
| The variety of products and services | 0.2708 | 0.1731 | 0.246 |

It can be seen that both males and females are satisfied with the cost of traveling for shopping on m-commerce and they did not travel to department stores or shopping centers which cost more than online shopping. The factors also confirm that using the messaging application satisfied customers in terms of the interaction with merchants.

Other minor factors are also found that there is no significance in marital status for buying decision making. However, there are significance in age, occupation and education. Table 3 to Table 5 presents the ANOVA results from age, occupation and education factors, respectively.

**Table. 3.** Age factor for buying decision making

| Criteria | Age | | | | Sig. |
|---|---|---|---|---|---|
| | <22 | 23-35 | 36-48 | 49-61 | |
| The variety of products and services | 0.4000 | 0.1852 | 0.2308 | 0.5000 | 0.530 |
| Cheaper price | 1.0000 | 0.4259 | 0.3077 | 0.5000 | 0.028 * |
| Buying from suggestion by friends | 0.2000 | 0.0556 | 0.0000 | 0.0000 | 0.149 |
| Product's popularity | 0.200 | 0.0926 | 0.1026 | 0.0000 | 0.852 |
| Merchant's reliability | 0.0000 | 0.0926 | 0.1026 | 0.5000 | 0.252 |
| Bargaining | 0.4000 | 0.0556 | 0.1026 | 0.0000 | 0.074 |
| Cost of travelling for shopping | 1.0000 | 0.5741 | 0.6667 | 0.0000 | 0.066 |
| Price comparison | 0.4000 | 0.4444 | 0.5128 | 0.5000 | 0.915 |
| The interaction with merchant | 0.6000 | 0.4815 | 0.3846 | 0.5000 | 0.723 |
| Reviews and comments from other customers | 0.4000 | 0.4444 | 0.3077 | 0.0000 | 0.393 |

**Table. 4.** Occupation factor for buying decision making

| Criteria | Occupation | | | | | Sig. |
|---|---|---|---|---|---|---|
| | Business owner | Government officer | Employee | Retired | Student | |
| The variety of products and services | 0.4167 | 0.1842 | 1.0000 | 0.0000 | 0.2222 | 0.118 |
| Cheaper price | 0.3333 | 0.4211 | 0.0000 | 0.0000 | 0.5556 | 0.537 |
| Buying from suggestion by friends | 0.0000 | 0.0395 | 0.0000 | 0.0000 | 0.1111 | 0.781 |
| Product's popularity | 0.0000 | 0.0921 | 0.0000 | 0.0000 | 0.3333 | 0.129 |
| Merchant's reliability | 0.1667 | 0.1053 | 0.0000 | 0.0000 | 0.0000 | 0.756 |
| Bargaining | 0.0833 | 0.0658 | 0.0000 | 0.0000 | 0.3333 | 0.119 |
| Cost of travelling for shopping | 0.5000 | 0.6579 | 0.0000 | 0.0000 | 0.6667 | 0.191 |
| Price comparison | 0.5000 | 0.5000 | 0.0000 | 0.5000 | 0.2222 | 0.501 |
| The interaction with merchant | 0.5833 | 0.4342 | 0.0000 | 0.0000 | 0.5556 | 0.446 |
| Reviews and comments from other customers | 0.2500 | 0.4079 | 0.0000 | 0.5000 | 0.3333 | 0.759 |

Table. 5. Education factor for buying decision making

| Criteria | Education | | | Sig. |
|---|---|---|---|---|
| | Undergrad | Bachelor | Higher degree | |
| The variety of products and services | 0.4000 | 0.2885 | 0.1163 | 0.081 |
| Cheaper price | 0.6000 | 0.3654 | 0.4419 | 0.516 |
| Buying from suggestion by friends | 0.4000 | 0.0192 | 0.0233 | 0.0000* |
| Product's popularity | 0.2000 | 0.1346 | 0.0465 | 0.277 |
| Merchant's reliability | 0.2000 | 0.0962 | 0.0930 | 0.751 |
| Bargaining | 0.2000 | 0.1154 | 0.0465 | 0.350 |
| Cost of travelling for shopping | 1.0000 | 0.6154 | 0.5814 | 0.192 |
| Price comparison | 0.6000 | 0.3846 | 0.5581 | 0.206 |
| The interaction with merchant | 0.6000 | 0.4808 | 0.3953 | 0.564 |
| Reviews and comments from other customers | 0.6000 | 0.3846 | 0.3488 | 0.554 |

## 4.3. Behavioral Factors for Products and Services

The behavioral factors regarding users' buying products and services were explored. The demographic factors were combined with type of products and services. It can be seen that gender, age, occupation, education and income have a significant level in some products and services for mobile internet users to make decisions for buying. The results were shown in Table 6. The check mark determined the products and services that tend to impact on demographic factors.

**Table. 6.** Behavioral Factors For buying decision making based on demographic factors

| Factors | Type of products and services | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Beauty and healthy | Feminine products | Masculine Products | Shoes, bags and leather | Appliances | Mechanical tools and vehicle parts | IT and smartphones | Office accessories and stationary | Sports and outdoors | Supermarket and fresh foods |
| Gender | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | |
| Age | ✓ | | | | | | | ✓ | | |
| Occupation | | | | | | | | | | ✓ |
| Education | | | | | | ✓ | | ✓ | | ✓ |
| Income | ✓ | ✓ | | | | | | | | |

In addition, the further analysis was conducted using multivariate (MANOVA). The factors were considered by the significant score of linear combination using Wilk's Lambda. The results appeared that the educational level impact on advertising for messaging application. This can be seen from Table 7 and Table 8.

**Table. 7.** The Box's Test of Equality of Covariance Matrices

| Box's M | 84.737 |
|---------|--------|
| F | 1.363 |
| df1 | 55 |
| df2 | 25930.769 |
| Sig. | 0.058 * |

**Table. 8.** The Multivariate Testson education factors

| Effect | | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared |
|--------|-------------------|-------|--------|---------|---------|-------|-------|
| Intercept | Pillai's Trace | .638 | 15.514 | 10.000 | 88.000 | 0.000 | 0.638 |
| | Wilks' Lambda | .362 | 15.514 | 10.000 | 88.000 | 0.000 | 0.638 |
| | Hotelling's Trace | 1.763 | 15.514 | 10.000 | 88.000 | 0.000 | 0.638 |
| | Roy's Largest Root | 1.763 | 15.514 | 10.000 | 88.000 | 0.000 | 0.638 |
| @1.5 Education | Pillai's Trace | .377 | 2.066 | 20.000 | 178.000 | 0.007 | 0.188 |
| | Wilks' Lambda | .655 | 2.073 | 20.000 | 176.000 | 0.007 | 0.191 |
| | Hotelling's Trace | .478 | 2.079 | 20.000 | 174.000 | 0.006 | 0.193 |
| | Roy's Largest Root | .330 | 2.940 | 10.000 | 89.000 | 0.003 | 0.248 |

## 4.4.  Merchants Perspective towards Messaging Application

The results from the first stage were summarized and brought to discussion in the focused group of online shops who use LINE @ application. This is to investigate the influence factors related to advertising and m-commerce and consolidate related factors. The business owners were invited to use the positive random method. Their businesses are cosmetics, mobile phone accessories, and clothes. This is corresponding to the type of products based on mobile phone user's preference from influence factors in the first stage of survey results.

The focused group was conducted and there were opinions which related to influence factors in the terms of messaging application. The main advantage to make business grow fast is the ability to respond to mobile phone user immediately via chat messaging in the application. Merchants in the focused group mentioned that if the customers got response, it affected directly to their decision making on buying the product. The more conversations occurred, the higher rate of purchase. In addition, the application can overcome the limitation of m-commerce in terms of physical goods trial. Although mobile users cannot see or touch the physical goods like they are at the storefront, merchant can send the picture and other media such as video to present goods instead of salespeople at the storefront. Moreover, the return customers also came from a good relationship between merchant and customers on the chat features. Some customers may help review the product as well. The sample messaging application usage for merchant can be seen in Figure 2.
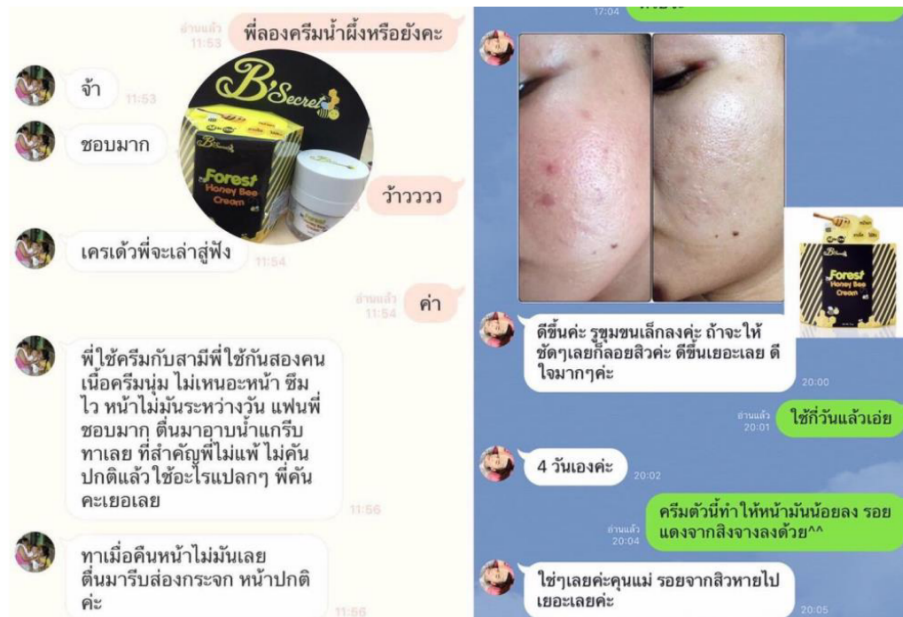
**Figure. 2.** The example of messaging application usage for merchants

After that, the consolidation of influence factors related to advertising on messaging applications was processed to create an example of advertisement for mobile phone users. Reviews and comments of customers can increase the reliability and trustworthiness of merchants and increase the opportunity to attract new customers to buy the products. The example of created advertising using influence factors are shown in Figure 3.



**Figure. 3.** The Example of created advertising using influence factors concentrated through the messaging application.

**5. Discussion and Conclusion**

The advancement of information technology leads to the development of a new business paradigm which is focused on innovative technology. The new business such as m-commerce seems to be a crucial area in the country's development. This can create value-added in traditional business by combining technology. With messaging applications and social networking on mobile devices, the combination of its features and business model can build start-up businesses driven by these technologies. In order to access the target group of each business appropriately. The influence factors related to advertising on messaging applications need to be investigated.

This study implemented a mixed method; quantitative and qualitative method to investigate the influence factors on advertising criteria of messaging application user. The findings showed three main factors, demographic factors, m-commerce factors, and behavioral factors that affected the buying decision making. Whereas, the demographic factor such as marital status showed no differences in this study. The products such as information technology accessories, beauty products and fashion goods are an important business area for customers focused on m-commerce. In addition, it found that education had a significant effect towards advertising on messaging applications. Furthermore, the derived influence factors and criteria for advertising on messaging applications were confirmed with online merchants in the focused group method. The main advantage of messaging applications is the ability to interact with merchants and get a quick response.

In the future works, it is important to consider the other factors related to merchants. The survival of new merchants, especially m-commerce merchants, seems to be important to the country's development. Therefore, the sustainable strategy of m-commerce should be investigated. This is to build sustainable development on m-commerce for both ends, which are buyers and sellers.

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