The Effect of Cross Promotion among Mobile game 
On Consumer’s Attitude towards game

Jeong-Min Park, 
Department of Interaction Design, 
Graduate School Hallym University, South Korea. 
E-mail: yhnujm123456@naver.com

Hye-Ryeon Yong, 
Department of Interaction Design, 
Graduate School Hallym University, South Korea. 
E-mail: piangsae0806@naver.com

Hyun-Seok Hwang, 
Faculty of Management Professor, 
Hallym University, South Korea. 
E-mail: hshwang@hallym.ac.kr

Abstract

In line with the increase of consumers’ demand on mobile games, game companies face stiff competition. For a more successful marketing strategy, many game companies actively adopt cross promotion. The cross promotion marketing strategy in the mobile game is regarded as a low cost and high efficiency marketing method since the game companies provide new experiences game users by utilizing existing game infrastructure and absorbing current users of game companies. Despite these advantages of cross promotion, little practical study on the relation between cross promotion and mobile game acceptance has been conducted. Accordingly, the aim of this study was to figure out influential factors of cross promotion on the acceptance of mobile game. For this purpose, a questionnaire survey was performed and the influential factors on the attitude toward mobile game were examined using Structural Equation Model. Regarding several variables related to the characteristics of cross promotion marketing such as genre involvement, game utility and advertising expression technique, we examined the structural effects on perceived playfulness and attitude toward games. As a result, firstly, genre involvement, game utility and type of advertising expression were proved to have a significant effect on perceived playfulness. Secondly, when advertisement is expressed as an image rather than a text message, it has more positive effect on perceived playfulness and attitude toward game. Finally, perceived playfulness on mobile game had significant effect on attitude toward game. This study reveals the structural relationship of cross promotion and attitude toward mobile game. Analysis results and implications are suggested with concluding remarks.

Key words: Cross promotion, Mobile game, Genre involvement, Game utility, advertising expression, perceived playfulness, Attitude toward game, Structural equation model.
1. Introduction

As use of smartphones have been spreading out all over the world, mobile markets are dramatically being developed. Thus, interest and competitiveness in wireless contents of smartphones have a tendency to be increasing day by day. One of the fields predicted to have the highest possibility of development is mobile game fields [1].

Various kinds of large-scale mobile games have been emerging and those games are being successful in the fields. Game industry specialists predict that mobile game markets will grow more and more. World mobile game markets including South Korea are the fields which have a great possibility of development in the future because mobile games don’t separate existing game players but invite new games members when similar genre of games are released[8].

Because of increased demands for borderless mobile game markets, numerous game companies actively use cross promotion strategies for more successful marketing. Cross promotion strategies in mobile games have great advantages of low cost and high efficiency, which is because it provides consumers with new experience of games using existing game infrastructure and exploit existing users whom each game company has retained. However, empirical studies in acceptance relationship between cross promotion and mobile game are inadequate despite of marketing advantages in cross promotion.

Therefore, this research finds out cross promotion factors affecting mobile game acceptance of users and structural relationship between factors. First, we examine factors which can affect users’ acceptance attitude toward game based on existing research. Second, we examine structural influence among conceptual factors and set up hypothesis. Third, we use factor analysis and verification of reliability to verify research hypotheses and Structural Equation Model (SEM) to analyze structural model. Lastly, we plan to provide working level implications and results about how mobile game cross promotions affect users’ acceptance attitude toward game through analysis of SEM.

2. Literature Review

2.1 Related Works

As specifications of mobile phones are getting various and improved, the phenomenon of business concentration takes place according to extension on market share of a small number of companies related to mobile([3],[22],[23]). Mobile games are defined as games played with devices such as cell phone or PDA in servers connected through wireless Internet [1]. Mobile games have a high accessibility for being played with mobile phones. These factors of accessibility and convenience cause ‘replay factor’ which makes users enjoy playing games continuously and work as main factors for market extension. According to
growth of mobile games, how to advertise mobile games receives attentions and companies also pay attention to aggressive marketing for securing consumers.

Enjoyment is defined as the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequence that may anticipated([24],[26]). Early studies on Technology Acceptance Model (TAM) mainly emphasize on practical aspects but recent studies emphasize on playful aspects [25]. Meanwhile, Agarwal and Karahanna(2000) understood enjoyment as cognitive absorption. They verified that cognitive absorption of students who are using Internet is a significant predictor of perceived usefulness through extensive Technology Acceptance Model (TAM).

Van der Heijden(2004) examined that ‘perceived enjoyment’ of visitors in Dutch Movie Website has a significant causal relationship with ‘intention to use’ through an empirical study’.

2.2 Genre Relativeness

Genre Relativeness is defined as the extent to which the genres of games being played correspond to the genres of mobile games exposed in cross promotion. In other words, players consider games are in the same context if games in cross promotion are similar with the types of games currently being played although those are different from each other. Cross promotion is one of promotion strategies of how broadcasting companies or media corporations who have many channels promote through their own broadcasting channels or other media. Cross promotion of media corporations have advantages of retaining existing viewers and attracting new kinds of viewers, or having high effectiveness with low cost [10].

Therefore, we examined perceived enjoyment toward mobile games when cross promotion is applied according to genre relativeness.

2.3 Advertisement Expression

According to Media Richness Theory, business performance is improved when one selects an appropriate media considering the nature of task performance. This theory suggests four kinds of criteria for richness as following: 1) Feedback 2) Multiple cues 3) Language variety 4) Personal focus and performance effectiveness occurs when all of these four criteria are satisfied [5]. Also, Daft and Lengel proposed that media gets richer as satisfying criteria for richness better, rich media is more suitable as tasks are more ambiguous, and not rich media is suitable for explicit tasks [4]. Studies, based on early Media Richness Theory, on advertisement expression skills which can affect consumers’ Attitude toward Game are diversifying ([13],[18]). In terms of web advertising, users recognize symbolisms differently depending on production methods of advertisement contents, which can be divided into text and image. In conclusion, users recognize low symbolism about text types of web pages but recognize high symbolism about image and video types of web pages.
3. Research Model and Hypothesis

3.1 Research Model

The research used variables such as ‘Perceived usefulness’, ‘Perceived Enjoyment’, and ‘Attitude’ based on preceding researches. And also, we included external variables of ‘Genre Relativeness’ expected to affect attitude toward mobile game and ‘Advertisement Expression’ selected as variables on other advertisement studies. As shown in <Figure 1>, external variables of research model have structural relationships. In other words, external variables affect perceived enjoyment and perceived enjoyment ultimately affect attitude toward actual mobile game.

Figure 1: Research Model

3.2 Hypothesis

We judged users perceive games are more interesting when the genres of game in promotion are identical with the ones of game being played. Thus, we developed Hypothesis H1 about genre relativeness and perceived enjoyment as following.

H1: Genre relativeness has a positive effect (+) on perceived enjoyment.

Player can have more interest and fun if rewards, which they can be given through experiencing advertisements of mobile games and playing exposed games in advertisements, vary. Therefore, we formed a 2 about relationships between perceived usefulness and perceived enjoyment based on cognitive process which players can experience when they see advertisements of mobile games.

H2: Perceived usefulness has a positive effect (+) on perceived enjoyment.

Image advertisement in mobile games plays a role in making players have curiosities and experience fun factors indirectly about games [11]. Finally, we formed a 3 about relationships between advertisement expression and perceived enjoyment ([2],[12],[7]).

H3: Advertisement expression has a positive effect (+) on perceived enjoyment.
Effective images in mobile advertisements through cross promotion are expected to leave strong impressions toward games, make player remember those games for a long time, and finally form attitude toward particular games. Therefore, we assumed advertisement expression more directly affect attitude formation comparing to other variables and formed a 4 about relationships between advertisement expression and attitude toward games [14].

**H4: Advertisement expression has a positive effect (+) on Attitude toward games.**

We judged attitude toward games generally increase as users perceive games as more interesting. Thus, we developed Hypothesis H5 about perceived enjoyment and attitude toward game as following([6],[15],[16],[17],[19],[20],[21],[23],[26],[27]).

**H5: Perceived enjoyment has a positive effect (+) on Attitude toward game.**

4. Methodology & Result

4.1 Sample Design and Data Collection

We selected university students who are expected to play mobile games frequently as the subjects of the survey. Data collection had been conducted through an internet survey and offline survey for two days from on December 3 to on December 5, 2014. 276 answers were collected and 252 answers were analyzed after eliminating 24 answers with missing values and low credibility. Demographic characteristics of the respondents shows the research was composed of 118 males (46.8%), 134 females (53.2%), and their average age was 21.8.

4.2 Operational Definition and Measurement

Operationalization of variables and measurement was designed based on the established structural equation in the research and table 1 shows the operational definition of variables and the list of measurement respectively. The established survey items were confirmed through continuous previews and a pilot study of university student users who have various levels of mobile game experience. This research conducted the survey using Likert 5-point scale measurement for each item.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational Definition</th>
<th>List of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Genre Relativeness</strong></td>
<td>The extent to which mobile games currently being played by users and cross promotion being exposed are related</td>
<td>1. I have more interest when the genre of my games coincides with the one of cross promotion games.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. It is easier to remember when the genre of my games coincides with the one of cross promotion games.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. I might be going to click a particular game when its genre coincides with the genre of my games.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. A particular game is more attractive to me when its genre coincides with the genre of my games.</td>
</tr>
<tr>
<td><strong>Perceived Usefulness</strong></td>
<td>The extent to which game items, money, gifts, and other rewards(e.g. level-up, power-up of characters) were perceived through cross promotion</td>
<td>1. I feel pleased when I am given ‘game items’ for my game by clicking mobile game advertising provided from cross promotion.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. I feel pleased when I am given ‘game money’ for my game by clicking mobile game advertising provided from cross promotion.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. I feel pleased when I am given ‘gifts’ for my game by...</td>
</tr>
</tbody>
</table>
Types of advertising expression form in mobile games being exposed through cross promotion (image vs. text)

1. It is easier to understand the contents of image advertising than the ones of text advertising.
2. I have more interest in the contents of image advertising than the ones of text advertising.
3. Image advertising is more interesting than text advertising.
4. I prefer watching image advertising first to text advertising.
5. I think image advertising is more attractive than text advertising.

The extent to which players have an interest in mobile games after watching cross promotion advertising

1. Mobile games induce one's fun
2. Mobile games stimulate one’s curiosity
3. Mobile games provides unique enjoyment.
4. I feel excited when playing mobile games.

The extent to which players have attitudes toward mobile games and accept mobile games

1. I have a good impression on mobile games.
2. I am favorable toward mobile games.
3. I have positive attitude toward mobile games.
4. I have a sense of intimacy toward mobile games.

4.3 Model Validation

4.3.1 Factor Analysis and Reliability

Before analyzing the research through the model of structural equation, we conducted an exploratory factor analysis in order to confirm whether presented questions have the common factors among the variables. The factors were extracted by using principal component analysis. Varimax, which maximizes the loading of each variable on one of the extracted factors and minimize multi-collinearity among the factors, was used for factor rotation in the research. We also conducted reliability analysis in order to confirm whether answers of the measurement items categorized according to each factor respectively have reliability. The results of factor analysis of the survey are shown in Table 2. All of the Cronbach’s α values are higher than 0.8. Therefore, it is confirmed that each factor has a sufficient reliability of measurement.
We computed Kaiser-Meyer-Olkin’s Measure of Sampling Adequacy in order to examine the possibility of factor analysis and the value is 0.889 higher than recommended level of 0.5. Barlett’s Test of Sphericity was used to ensure correlation matrix among variables and examine the adequacy of factor analysis for high correlation among partial variables. The p-value is 0.000 and it confirms the possibility of factor analysis. At the end, we examined communality, the percentage of variable distribution, which can be described through factors and table 2 shows that communality level of all variables are also higher than recommended level of 0.5.

<table>
<thead>
<tr>
<th>GR</th>
<th>PE</th>
<th>PU</th>
<th>AU</th>
</tr>
</thead>
<tbody>
<tr>
<td>.079</td>
<td>.255</td>
<td>.122</td>
<td>.115</td>
</tr>
<tr>
<td>.264</td>
<td>.286</td>
<td>.122</td>
<td>.159</td>
</tr>
<tr>
<td>.850</td>
<td>.157</td>
<td>.164</td>
<td>.197</td>
</tr>
<tr>
<td>.155</td>
<td>.847</td>
<td>.154</td>
<td>.118</td>
</tr>
<tr>
<td>.096</td>
<td>.049</td>
<td>.138</td>
<td>.165</td>
</tr>
<tr>
<td>.558</td>
<td>.777</td>
<td>.854</td>
<td>.143</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.901</td>
<td>.697</td>
<td>.749</td>
<td>.811</td>
</tr>
</tbody>
</table>

GR=Genre Relativeness, PU=Perceived Usefulness, AE=Advertisement Expression, PE=Perceived Enjoyment,

AU= Attitude toward game

To ensure convergent validity, we have Calculated AVE and construct Reliability. All values in AVE, and Construct Reliability larger than the recommended levels, 0.5 and 0.7, respectively.

Since, all square values in table 3 excepting the diagonal elements are smaller than AVE(S); we can verify the discriminant validity of collected data.

4.4 Path Analysis through Structure Equation Model

AMOS 20, which analyzes a structure equation model, was used to analyze the suggested research model in Figure 1.
First of all, we examined model fit of Table 5 assessment and the results are as in the following all of the models satisfy the acceptable level of fit criteria. Therefore, the research model is verified to be acceptable as a whole.

Table 5: Model Fit

<table>
<thead>
<tr>
<th>Fit Index</th>
<th>Model</th>
<th>Recommended Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$</td>
<td>281.7</td>
<td></td>
</tr>
<tr>
<td>RSMEA</td>
<td>0.049</td>
<td>$\leq 0.08$</td>
</tr>
<tr>
<td>GFI</td>
<td>0.904</td>
<td>$\geq 0.9$</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.875</td>
<td>$\geq 0.8$</td>
</tr>
<tr>
<td>CFI</td>
<td>0.970</td>
<td>$\geq 0.9$</td>
</tr>
<tr>
<td>NFI</td>
<td>0.925</td>
<td>$\geq 0.9$</td>
</tr>
<tr>
<td>NNFI(TLI)</td>
<td>0.965</td>
<td>$\geq 0.9$</td>
</tr>
<tr>
<td>SRMR</td>
<td>0.057</td>
<td>$\leq 0.1$</td>
</tr>
</tbody>
</table>

Table 6: Path Analysis Result

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path</th>
<th>Path coefficient</th>
<th>T</th>
<th>P-value</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Genre Relativeness $\rightarrow$ Perceived Enjoyment</td>
<td>0.223</td>
<td>3.156</td>
<td>0.002</td>
<td>Support*</td>
</tr>
<tr>
<td>H2</td>
<td>Perceived Usefulness $\rightarrow$ Perceived Enjoyment</td>
<td>0.267</td>
<td>3.700</td>
<td>0.000</td>
<td>Support*</td>
</tr>
<tr>
<td>H3</td>
<td>Advertisement Expression $\rightarrow$ Perceived Enjoyment</td>
<td>0.196</td>
<td>2.871</td>
<td>0.004</td>
<td>Support*</td>
</tr>
<tr>
<td>H4</td>
<td>Advertisement Expression $\rightarrow$ Attitude toward game</td>
<td>0.144</td>
<td>2.705</td>
<td>0.007</td>
<td>Support*</td>
</tr>
<tr>
<td>H5</td>
<td>Perceived Enjoyment $\rightarrow$ Attitude toward game</td>
<td>0.724</td>
<td>12.085</td>
<td>0.000</td>
<td>Support*</td>
</tr>
</tbody>
</table>

*<0.01

As shown in table 6 all hypotheses in the research model are supported with 0.05 significant levels. According to the result of path analysis of structural equation model in Table 6, the model is as following in Figure 2.

Figure 2: Analysis Result Model

4.5 Result and Analysis

The result of H1 shows that mobile game players perceived cross promotion games as more interesting when the genre of their games coincides with the one of cross promotion.
games. We concluded it is because players are enough skilled in the games which they have been playing and have much enjoyment experience about relevant genres.

The H2 about factors for perceived game usefulness shows that the ‘Perceived Usefulness’ have a positive influence on ‘Perceived Enjoyment’. Players have more interest in exposed games as the advantages such as game items, money, and other rewards (e.g. level-up, power-up of characters) they can be given are more. That is, the more player are given rewards by playing games, the more they are interested in new mobile games. Consequently, rewards affect players’ decision on inflow of games.

The H3 shows ‘Advertisement Expression’ affects ‘Perceived Enjoyment’. The different expression types of advertisements between image advertisements composed of photo and animation and text advertisements have different influence on arousing players’ interest in games. It explains image advertisements which can express special images about games have stronger impact as a mechanism of persuasion than static text advertisements. And, as we can reason out from the H4, ‘Advertisement Expression’ have direct influence on ‘Attitude toward game’. This fact suggests that players can flow in games after perceiving enjoyment factors of games first as mentioned in H3 but also can be led to attitude toward games by the level of image advertisement expression. Therefore, follow-up studies on advertisement expression skills which can directly and indirectly affect both game enjoyment and attitude toward games have to be continued.

At the end, the result of H5 shows that mediating factor of ‘Perceived Enjoyment’ affected by many factors leads to ‘Attitude toward game’.

In suggesting the result of structure equation, an important thing on attitude toward playing mobile games exposed through cross promotion is that factors which can maximize the enjoyment of mobile games have to be emphasized.

5. Conclusions and Implications

This study, different from existing studies on acceptance of mobile game promotions, is distinctive for including variables which are expected to have influences on consumers’ attitude toward game such as ‘Genre Relativeness’ and ‘Attitude toward game’ in terms.

The significance of the research is as following. First, in terms of academic aspect, it has a significant implication because it draws factors of mobile game promotions which affect consumers’ attitude toward game and finds out structural relationship between them. Second, in terms of practical aspect, it also has a significant implication because we segmented mobile game consumers’ attitude toward game through cross promotion into ‘Genre Relativeness’, ‘Perceived Enjoyment’, and ‘Advertisement Expression’ and then tried to explain each influence among three of them and reasons for that. These results can provide guidelines for marketing strategies in mobile game industry later. In conclusion, we can explain that cross
promotion in mobile games have an influence consumers’ acceptance attitude toward game and help understanding of detailed factors which affect those acceptances.

The limitation of study is lack of regulation effects which can affect consumers’ acceptance attitude toward game such as gender, types of game, game skill, and absorption. Attitude toward game can be different depending on users’ gender, preferred types of game, extent to game experience and other factors that can affect attitude toward game have to be considered. In the future, by conducting additional empirical researches in many conditions, additional studies which can draw more general results and implication and analyze regulation effects depending on various segmentations of users need to be conducted.

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