

A RESEARCH OF FACTORS AFFECTING INTENTION TO PURCHASE ITEMS OF MOBILE SOCIAL NETWORK GAMES IN KOREA

: MAINLY WITH ‘SCORING TYPE OF’ SOCIAL NETWORK GAMES

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Abstracts

Many types of business are rapidly growing in a social network service market. Social network could achieve brisk growth due to social network game (SNG).

As users of SNG increase substantially, people are paying attention to profits making from users' game item purchases. Thus, this research examines what make SNG users purchase items. First, we selected flow as antecedent of item purchase intention through reference research and divided factors affecting the flow into personal influences, social relations and social influences. We advanced research hypotheses after choosing enjoyment and competence as personal influence variables, social interaction and self-presentation as social relation variables and social norms and perceived critical mass as social influence variable.

Key word: Social network game (SNG), personal influence, social relationship, social influence, Purchase intention, Flow

1. INTRODUCTION

1.1. Research background and purpose

Social network service (SNS) is online service focused on facilitating the building of social network or social relations among people who, for example, share real-life connections. Various forms of business and content are expanding rapidly by applying the social network service model. The most pronounced example in promoting social network is social network game.

As more people use SNG service and it becomes more popular, its profitability from users' game item purchases is closely followed by the media recently. In a situation when public interest in SNG can't be greater than this, DMC media conducted a research to predict future SNG market and find out the elements of success by analyzing users' SNG use patterns and needs. In the research, social network games, such as Anipang, people can play on SNS messenger "Kakao Talk" took the top rankings. Also, more than 75% of respondents play games on mobile devices and 25% has purchased game items according to the survey. The games industry says Anipang and Dragon Flight have earned up to W 400 million and W 2 billion a day respectively.[31] It has brought a tremendous change in the SNG industry and

the media even compared the phenomenon to hitting the jackpot.

This research examines what elements make SNG users purchase game items. There are not many researches on SNG and it's even harder to find studies of intention to purchase game items. Although some researches about purchase of online game items exist, those previous researches are not enough to fully explain purchase intention of the current SNG items. By identifying what makes SNG users game items, this research will practically contribute to enhancement of the SNG industry and encourage more diverse research on purchase intention of game items.

The main purpose of this study is to figure out the elements that affect SNG users' purchase of game items. To that end, independent variables affecting SNG users' purchase intention were selected for this research after surveying theories about online game and SNG.

2. STUDY ON THE LITERATURE: SOCIAL GAMES

2.1. Social Network Game

Each research has different definitions and characteristics about SNG. SNG is defined as a service that allows users to enjoy both advantages of SNS and enjoyment from games [20],[30]. It can be also defined as a new form of communication game, based on social connections, that enhances users' social relations formed on the Internet by using SNS platform [24]. As in definitions above, SNG is based on SNS and its purposes and methods are focused on "social relations" among SNS users rather than game itself with the element of "enjoyment" added.

Also, SNGs are being developed in various kinds as SNS and smart phone markets are growing steadily [23]. In their research, Noh Haeseon and Lee Daeung classifies SNG platform into PC web-based, client-server and mobile [23] based on 50 SNGs' rankings on SNS website. Most of SNGs are developed in two platforms, PC web-based flash games and mobile games and belong to one of the following categories – construction/management, fostering, role playing, puzzle, card game, board game and others.

This study aims to conduct a survey of SNG users to understand purchase intention of game items, and thus, we surveyed popular SNSs, that run on most widely used smart phone operating systems in Korea, Android and IOS, and their popularity. The result shows games in first top four rankings are from KaKao Talk, a mobile SNS-based messenger. Types of popular games in the chart are mainly puzzle games, including AniPang, CandyPang and Boooly 2, and shooting games such as Dragon Flight. Users play puzzle games to solve riddles or difficult problems. Shooting games belong to a subordinate category of action games and game users eliminate enemies using standoff weapons like guns in those games.

The mobile SNGs mentioned above have different types and methods but have one thing in common. In existing general games, there is no time limit and the purpose to play those games is to reach final rounds. On the other hand, SNG users play games competing with friends to break a record on Kakao Talk (DMC report).

SNGs above can be redefined as "games in which users want to win a high score," or "games designed for scoring." Thus, this research will focus on this aspect.

SNG items users purchase online are defined as virtual resources that help users to raise their level in games. Those items allow users to keep playing games, help them achieve a high score or help them score easily. SNG users have to receive game items such as "heart" or "wing" to keep playing games because there is time limit in SNGs. SNGs have a system through which users, especially those who play games often, can buy such game items. Game items for winning a high score include "fever mode" and "bomb." Those items are used as means to buy other game assisting items that give users a change to keep playing, help them

achieve a high score or help them score easily.

The most prominent characteristic of SNG is that members of a certain SNS can play games together and the purpose is to build social relations among those users. In addition, users don't have to log on to the service at the same time to play a game together because SNGs run on an asynchronous system, compared to previous games. That is, SNG users can keep social relations while they keep playing games by sharing their game score results even though other users are not logged on at the same time.

2.2. Purchase Intention

Purchase intention is the likelihood that a consumer will buy a particular product resulting from the interaction of his attitude towards it and perceptions of it [6]. Purchase occurs influenced by psychological motive rather than logical thinking and consumers want to experience pleasure or fantasy in the process of purchase caused by psychological or emotional motive [7]. It turned out that past purchase intention plays an important role on repeated purchasing behavior in the future and that satisfaction or dissatisfaction from past purchase experiences affect repetitive purchase.

In a related research on purchase intention of online game items, Kim Jeyeong (2006) supposed elements such as concentration, participation, challenge, social interaction and enjoyment would affect satisfaction with online game and concluded those elements could have an effect on purchase intention of game items in a meaningful way [19]. Neang Dae Wi (2009) added service quality to the aforementioned elements and made the same conclusion [22].

Based on other related references mentioned above, purchase intention can be defined as "SNG user's intention to purchase game items in the future."

2.3. Flow

Flow means a state of optimal experience that comes from perception of challenge and technology about a given situation. In other words, it is a mental state of operation in which a person performing an activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment in the process of the activity [4]

Previous studies were focused on identifying theoretical concepts and measuring tools. Trevino and Webster (1992) considered flow as an antecedent of attitude toward information technology and divided it into four levels; control: attention focus: curiosity: intrinsic interest [14]. In the research on relations among attributes of online game, absorption in game and purchase intention, Kim Eonjeong (2012) used kinds of game as a moderating variable and showed there were many different attributes of online games that have a positive influence on users who play a certain online game[17],[18].

Based on the references, accordingly, flow can be defined as "a state a mental state of operation in which a person playing SNG is fully immersed in a feeling enjoyment in the process of the activity."

2.4 Personal Characteristics, Social Relations and Social Influences

SNG is a game designed for building social relations. Game has many emotional aspects as it is called an emotional sphere rather than a rational sphere [26]. Also, SNG users show personal or social behavior depending on the behavioral sphere and its influence [29]. Lee Jiae (2012) also conducted a research on SNG user's absorption in game in two different

perspectives; personal and social elements [26]

This research examines factors affecting flow and purchase intention of SNG users in three different aspects; personal characteristic which is an emotional aspect: social relation based on social relation building: social influence through social behavior and elements. Personal characteristics include enjoyment and competence and social relations include social interaction and self-presentation. Lastly, social influences include social norms and perceived diffusion.

2.4.1. Personal Characteristics

First of all, entertaining elements have been considered most important in many previous researches on online games. Those elements are known to be an antecedent of online game preference [28] and affect behavioral preference as well as cognitive preference [27]

Existing studies on online game users' purchase intention of game items show that enjoyment affects concentration and, in turn, it influences purchase intention [17],[18],[19],[21],[22],[25]. In this regard, an entertaining aspect can be considered as an important factor in SNG. Enjoyment can be defined as "pleasant and enjoyable feeling SNG users have when they play games" in this research.

Self-efficacy is the belief that one has the power to produce the effect by completing a given task or activity related to that competency [3]. It can be defined as the belief that a person has the competence to fulfill missions and achieve goals when applied to SNG. Kwon Dusen (2010) examined elements of self-determination - competence, relatedness and autonomy – have an effect on concentration and supposed that it would lead to more online game use [16]. Based on the previous study, self-efficacy in SNG can be viewed an antecedent for experience SNG flow and defined as confidence about one's own competence when he fulfills missions on SNG and achieves goals by doing certain activities.

2.4.2. Social Relations

Self-presentation includes intention to show oneself to others [13] and is a process in which one controls and manages information to show his particular persona to others[5]. That is, people want to make persona from a virtual subject to present such an identity in online games or online communities. They show goal-oriented behavior such as pouring time, money and effort [11] into looking for favorable comments or avoiding criticism from others on purpose [2], [9], [12]. Ko Jun (2008) researched factors influencing self-presentation and their effects on purchase intention of digital items. According to the research, individuals tend to compare themselves with others to judge their own competence. For example, personal website users, in general, purchase online items such as music or background image in order to narrow a gap with others or satisfy themselves[15]. While SNG users do not have a particular avatar or personal homepage, they satisfy their desire to present themselves by using their game scores to show only good persona to friends on SNS. Therefore, self-presentation can be defined as desire to show positive persona to others on SNG and it is an antecedent that can have an influence on flow and purchase intention.

SNS allows users to build and keep the same personal networks and social relations as offline. Therefore, SNS-based SNGs are more society-oriented than other games. It is no exaggeration to say that SNGs won't be able to provide service anymore without "social" interaction [26]. As network and the Internet gave birth to online games, it became possible for a variety of people to play games in the same virtual world, creating diverse interaction. (Nam Hyeonjeong, 2002) Interaction in SNG occurs in two ways; between systems: between users[10].

In a research of existing online games, Kim Jeyeong (2006) regarded concentration, participation, challenge, social interaction and enjoyment as factors affecting users' satisfaction about online game use and verified they also influence users' intention to buy game items [19]. Kim Eonjeong and Lim Dalho (2012) also viewed challenge, sense of belonging and interaction as an antecedent of online game flow and proved they have an effect on intention to purchase game items[17],[18]. SNG users also interact, playing game together, due to the unique attribute of network. For example, users exchange game items, work together to play games and have a conversation or send a gift to build a relationship [25]. More active social interact will bring more fun and more flow experiences to SNG users. Accordingly, social interaction in SNG can be defined as "experiencing social activities and building interrelation with other users while playing SNG."

2.4.3. Social Relation

Through theories, some researchers insist social elements have a full influence on personal behavior. In theory of Reasoned Action (TRA), the most popular one among them, a social factor used as an important variable is subjective norms. Subjective norm means common behavioral rule in a group in which members interact with each other. It exists online as well as offline and its importance in online communities, cafes, blogs and SNSs is closely associated with regulating members. Subjective norm is the person's perception that most people who are important to him or her think he should or should not perform the behavior in question. It practically means social norm [1] and it has two influential factors including informational influence. Informational influence occurs when one turns to others to obtain and accept accurate information about reality in certain situations: when a situation is ambiguous or when people become uncertain about what to do. The other is normative influence which occurs when one is pressured to do what people want him to do. In other words, one conforms to be liked or accepted by the members of the group even when the person doesn't agree [8].

Hsu and Lu applied social influences and flow theory to the TAM model and suggested a new model about intention to play an online game [8]. According to this research, social influences, social norm and critical mass, have a direct effect on intention to play an online game. While decision-making can be influenced by personal characteristic or flow, influences from a group or society one belongs to also influence one's decision. Therefore, it is expected that social norm will also have an influence on intention to play SNGs and to purchase game items. In this research, social norm can be defined as "the degree to which one is influenced by others who are important to the person in purchasing SNG items."

The other social influence is perceived critical mass. When a majority of users accept a new technology or service, an individual considers it valuable. It is involved with a network effect, a phenomenon that occurs when increased users lead to higher efficacy. As uncertainty is usually high when one accepts a new technology, the person is expected to be socially influenced. Critical mass is the fact that a minimum number (of people) in one's group affect one's decision when one behaves, decides, or accepts something [8]. That is, it is expected that social influences will be added to behavioral elements, such as accepting or using something, when one has relations with a number of people in SNG. Thus, perceived critical mass can be defined as "the degree to which one perceives the number of neighboring people in regard to purchase of SNG items" and it is expected to affect purchase intention.

3. RESEARCH HYPOTHESIS

The preceding research was conducted earlier to identify why SNG users purchase game

items and the results are provided as follows; personal characteristics (enjoyment, competence) influence flow of SNG (concentration); social influences (social norm, perceived critical mass) affect users' intention to purchase game items; social relations (self-presentation, social interaction) have an influence both on flow of SNG and users' purchase intention; flow of SNG also influence users' intention to purchase game items. Consequently, the following hypotheses were proposed.

P1: SNG users' enjoyment will have a positive influence on users' flow.

P2: SNG users' competence will have a positive influence on users' flow.

P3: SNG users' social interaction will have a positive influence on users' flow.

P4: SNG users' self-presentation will have a positive influence on users' flow.

P5: SNG users' social interaction will have a positive influence on users' intention to purchase game items.

P6: SNG users' self-presentation will have a positive influence on users' intention to purchase game items.

P7: Social norms in SNG will have a positive influence on users' intention to purchase game items.

P8: Perceived critical mass will have a positive influence on users' intention to purchase game items.

P9: Flow of SNG users will have a positive influence on users' intention to purchase game items.

4. CONCLUSION

The additional research will be conducted to verify hypotheses after developing a model of relations among variables and advancing measurement categories specifically for each variable. The research is expected to have quite similar results with previous results. Also, the variables of enjoyment, competence and self-presentation for social relations will have an influence on users' flow in a significant way.

In addition, self-presentation and perceived critical mass will have a significant effect on intention to purchase game items while influence from users' flow and social norm is expected to be insignificant.

Despite an explosive growth of the SNG industry and rapid increase in users, related researches are far from enough, especially researches on selling game items which are highly lucrative field for now. SNG is becoming more than just a fad and the SNG industry is creating significant benefits. More diverse and more profound researches need to be done about SNG in general. This research examined what elements practically affect SNG users when they buy game items. The result will provide useful lessons needed to design and make SNG and game items. By extension, a variety of studies on intention to buy online game items will be followed.

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