

THE INFLUENCE OF GAME OUTCOMES AND GAMERS REGULATORY FOCUS ON ONLINE GAME ITEM PURCHASING

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ABSTRACT. *The purpose of this study is to examine how the regulatory focus of gamers coupled with their gaming outcomes (i.e., win or lose) affects the purchase of online game items with cash – hyunjil. In an attempt to understand the shape of online game item purchasing behaviors, we empirically test the hypotheses using 2-way ANOVA through the use of data collected from 131 gamers who participated in the online game contest. The results show that hyunjil tendency is greater after losing than winning as well as that promotion-oriented gamers buy more in-game items than prevention-oriented gamers. Accordingly, this study reveals an interaction effect between the results of winning or losing a game and the gamer’s regulatory focus. Specifically, the winner prevention-oriented gamers do not feel a need to hyunjil. This study also reveals that the addictive purchasing of in-game items occurs more among promotion-oriented gamers than prevention-oriented gamers.*

Keywords: Online game, Gaming behavior, Regulatory fit, Game outcomes

1. Introduction. Judging from the sheer size of their industry, online games can be regarded as a dominant form of cultural content, one with both advantages and disadvantages. Although online games have contributed to the commercial success of the industry, the World Health Organization currently recognizes so-called “gaming disorder” as an official disease and regards gaming as a behavior that should be minimized. As such, online games have sparked considerable controversy in various societies worldwide.

The development direction of South Korea’s online gaming industry could be the reason for its distorted features [1]. Upon first emerging, the South Korean gaming industry started with rigid regulations rather than support, and in time, its growth stemmed from the development of online games, not packaged ones. As a result, the industry has not only lacked investment in the creation of games in diverse genres but also had to differentiate its profit structure from the one-time purchase of packaged games and create a limited business model based on massively multiplayer online games.

Although the best business model for online games is the pay-to-play model, it has struggled to appeal to a diverse range of consumers since 2005 [2]. That year, with its game Quiz Quiz, Nexon created the free-to-play model which became the representative business model for online games [3]. Later that year, with its MMORPG game MapleStory, it also introduced random reward items, which led to the coining of the word *hyunjil* (‘buying in-game items with cash’). Although *hyunjil* enhances the profits of game companies, it also faces criticism due to its effects on gamers and cheating behaviors [4]. In a sense, *hyunjil* is pivotal to explaining gaming behaviors and has ambivalent characteristics. Nevertheless, because researchers have not yet examined how *hyunjil* collectively shapes online gaming

behaviors, the study proposed here will involve investigating how the regulatory focus of gamers coupled with their gaming outcomes (i.e., win or lose) affects the purchase of online game items with cash.

This study expects that gamers spend more money on in-game items after they lose games, most likely because purchasing such items improves a player's odds of victory. Another assumption is that a gamer's regulatory focus affects his or her purchase of those items. Because promotion-oriented consumers have greater propensity for buying new products and tend to seek risks more than prevention-oriented consumers [5], the former will likely purchase more online in-game items than the latter. With reference to those hypotheses, the study will focus on examining the interaction effects of a gamer's regulatory focus and game outcomes of either winning or losing.

The rest of this paper is organized as follows. Section 2 introduces the literature review and hypothesis development. Section 3 describes the research design and measures and presents the results of hypotheses testing. Section 4 concludes with some remarks.

2. Literature Review and Hypothesis Development.

2.1. Online games and *hyunjil*. There are two types of game items: random reward items and definite game items. Lately, companies are launching games that sell definite game items along with their random reward items so that users can enhance their game performance as much as they put efforts [6,7]. However, the majority of domestic online games' profits rely on the purchase of random reward items. As a result of the rising scale of *hyunjil* items, online game triggered a variety of social problems. This created the dual image about online games. As game experience and game elements could affect game item purchasing [8], *hyunjil* can be regarded as the behavior of selecting game elements.

In general, there are three main purposes for buying in-game items. The first purpose is personal satisfaction. Similarly to decorating one's room in Cyworld, gamers buy items to modify their characters appearance according to their personal taste.

The second purpose is gold farming. Gold farming is the selling of in-game money and items for real money. Gamers even use automated bots for leveling and gold farming. In MMORPG like Lineage, people can trade their virtual goods and game money by private trade or in marketplace as an investment. Those virtual goods and currencies are traded via real money through 'Itembay' which is a typical online shopping mall for trading game items for real money.

The last purpose is spec-improvement of the fighting strength. It is a fundamental nature to upgrade one's game performance in games. Buying in-game items allows people to easily and drastically improve their game performance which often requires a lot of time and effort. In FIFA Online, many gamers spend money on upgrading their game characters.

2.2. Online game results and *hyunjil*. Most of the unprofessional game users play online games for self-fulfilling purpose [9]. As a result, emotional role regarding intrinsic motivation such as playfulness or flow have greater influence than instrumental purpose such as utility. Winning or losing in games can hence be a strong intrinsic motivation on an individual's emotion [10]. Thus, the existence of game outcomes (win or lose) would be the critical factor that makes people continue gaming.

Winning in games triggers a continuous strengthening mechanism that entails pleasure and happiness. In contrast, losing triggers self-reflection, regret, and a desire to recover from failures in the next game or buy online game items. Therefore, this study assumes the motivation for buying in-game items as self-reflection, regret, and recovery from failure and offers the following hypothesis.

Hypothesis 1: When the gamer loses in the online game, he or she will show higher purchase intention of online game items.

2.3. Regulatory focus and hyunjil. According to the regulatory focus theory, people impose self-regulation to approach matches to their desired end-states. Two types of self-regulation exist: promotion focus and prevention focus [11]. Promotion focus is a tendency to pursue growth and positive results, strive for the ideal self, and avoid errors of omission. On the other hand, prevention focus is a tendency to pursue safety, seek for the ought self which values obligation and responsibility, and avoid negative results and errors of commission.

In other words, promotion-oriented people seek advancement desires such as ideals, hopes, and aspirations, are alert for positive results, respond greatly to positive results, and try to avoid making errors of not engaging in actions that fit their desires. In contrast, prevention-oriented people seek safety desires such as responsibility and obligation, respond greatly to negative results, refuse wrong options, and avoid making errors of committing actions that they should not [12]. Crowe and Higgins (1997) state that personal motivation differs according to people's tendency to avoid making errors of omission or errors of commission; in other words, people's regulatory focus [13].

Relating the regulatory focus theory with the purchase of online game items, it can be assumed that promotion-oriented people will buy more game items than prevention-oriented people. Herzenstein et al. (2007) discovered that consumer's regulatory focus affects the purchase of new products [5]. Research showed that promotion-oriented consumers possess more high-tech products and purchase more newly launched items than prevention-oriented consumers. Based on the studies of Herzenstein et al. (2007), this study assumes that promotion-oriented gamers will show higher purchase rate of online game items than prevention-oriented gamers.

Hypothesis 2: Promotion-oriented gamers will show higher purchase intention of online game items than prevention-oriented ones.

2.4. The interaction effect between game results and regulatory focus. Success and failure outcomes are likely to be interpreted differently depending on the individual's regulatory focus. With a promotion focus, success and failure are experienced as the presence of positive outcomes and the absence of positive outcomes, respectively. With a prevention focus, however, success and failure are experienced as the absence of negative outcomes and the presence of negative outcomes, respectively. Because a same outcome has a different subjective value depending on the person's goals and regulatory orientation [14], this study assumes that game result of winning or losing and individuals' regulatory fit will have an interaction effect on the purchase of in-game items.

This study expects that promotion-oriented gamers will purchase more online game items than prevention-oriented gamers regardless of the game results because of the chronic motivation focus that maximizes positive results. In the case of prevention-oriented gamers, however, purchase intentions are likely to differ depending on game results. To be specific, prevention-oriented gamers do not feel a need to buy in-game items when they win because of the absence of negative results. When they lose, however, the existence of negative results enhances purchase intentions in order to avoid the present negative outcomes. This reasoning leads to following hypothesis.

Hypothesis 3: Game results and gamers' regulatory focus will have an interaction effect on the purchase intention of online game items.

3. Method and Results.

3.1. Participant and design. This study conducted a survey among 131 students of K university who participated in the online game competition (e-Sports tournaments) that was held on 20-22 May 2019. Among the 160 students that participated in the survey, 29 students who were against the median regulatory focus were excluded and the remaining 131 gamers (male = 98 (75%), female = 32 (25%)) were analyzed.

The online games that were used in the experiment were limited to games that were played in the contest as well as classified as purchase-inducing games in Namu Wiki (<http://namu.wiki/>). Such games included FIFA Online, Get Rich Modoo Marble, Crazy-racing Kartrider, LOL (League of legends).

The data were examined in the context of a 2 (game outcome: win vs. lose) \times 2 (regulatory focus: promotion vs. prevention) between subjects variance analysis regarding participants' purchase intention of online game items.

3.2. Measures. This paper conducted an empirical analysis using 2-way ANOVA. First, the regulatory focus group was divided based on Chronic RFQ (regulatory focus questionnaire) by Lockwood et al. (2002) [15]. The participants' chronic orientation toward promotion or prevention was assessed with a reduced version of the regulatory focus questionnaire (RFQ). A chronic RFQ index was calculated by subtracting the respondents' prevention mean scores from their promotion mean scores. This index was divided by median in order to create a predominantly chronic promotion group ($n = 63$) and a predominantly chronic prevention group ($n = 68$). Finishing the game, the groups were divided automatically into winning and losing groups.

The *hyunjil* measurement for this study measured with multi-item scales. As it was hard to find the exact validated scales, this study slightly modified it to suit the context based on the Hamari et al. (2017)'s study which developed the scale for buying in-game content [6].

After the game was over, the respondents were asked to check the game results (win or lose) and rate how strong the intentions have been when making in game item purchases on a 7-point Likert scales (1 = not at all, 7 = extremely strong). Faculty members with extensive experience in measurement scale development reviewed and the initial version of measurement scales were refined based on their feedback.

3.3. Hypotheses testing. The game outcomes (win vs. lose) \times the regulatory focus (promotion vs. prevention) two-way ANOVA was conducted using the measure of game-item purchase intention as the dependent variable. Table 1 shows the result.

The main effect of game results was statistically significant [$F(1, 127) = 30.373, p = 0.000$]. The main effect of regulatory focus on game-item purchase intention was statistically significant [$F(1, 127) = 27.974, p = 0.000$]. Thus, result supported hypothesis 1 and

TABLE 1. 2-way ANOVA result table

| Variable | WIN | | LOSE | | | |
|--|----------------------------|----------------------------|---------------------------|----------------------------|--------|--------|
| | Promotion ($n = 31$) | Prevention ($n = 32$) | Promotion ($n = 32$) | Prevention ($n = 36$) | | |
| <i>hyunjil</i> Mean (SD) | 3.35(0.55) | 2.06(1.01) | 3.71(1.10) | 3.39(0.58) | | |
| <i>Two-way ANOVA</i> | | | | | | |
| | SS | df | MS | F | p | |
| <i>Dependent Variable: hyunjil</i> | | | | | | |
| H1 | Game Results (Win/Lose) | 23.317 | 1 | 23.317 | 30.373 | 0.000* |
| H2 | Regulatory Focus | 21.476 | 1 | 21.476 | 27.974 | 0.000* |
| H3 | Game Results* | 7.560 | 1 | 7.560 | 9.848 | 0.002* |
| | Regulatory Focus | | | | | |
| | Error | 97.496 | 127 | 0.768 | | |
| <i>Remarks: SS: Sum of Squares, df: Degrees of Freedom, MS: Mean Sum of Squares,</i> | | | | | | |
| <i>F: F-statistic, p: p-value, *p < 0.01</i> | | | | | | |

hypothesis 2, respectively. Additionally, the game results and regulatory focus interaction were statistically significant [$F(1, 127) = 9.848, p = 0.002$].

In addition, the interaction effect mentioned in hypothesis 3 was also found. As shown in Figure 1, loser gamers buy more in-game items than winner gamers (hypothesis 1). Moreover, promotion-oriented gamers buy more in-game items than prevention-oriented gamers (hypothesis 2). Prevention-oriented gamers showed considerably more difference in purchase tendency depending on game results of winning or losing than promotion-oriented gamers (promotion focus: $M_{lose} = 3.71, M_{win} = 3.35, t(61) = 1.644, p = 0.016$ vs. prevention focus: $M_{lose} = 3.39, M_{win} = 2.06, t(66) = 6.246, p = 0.000$).

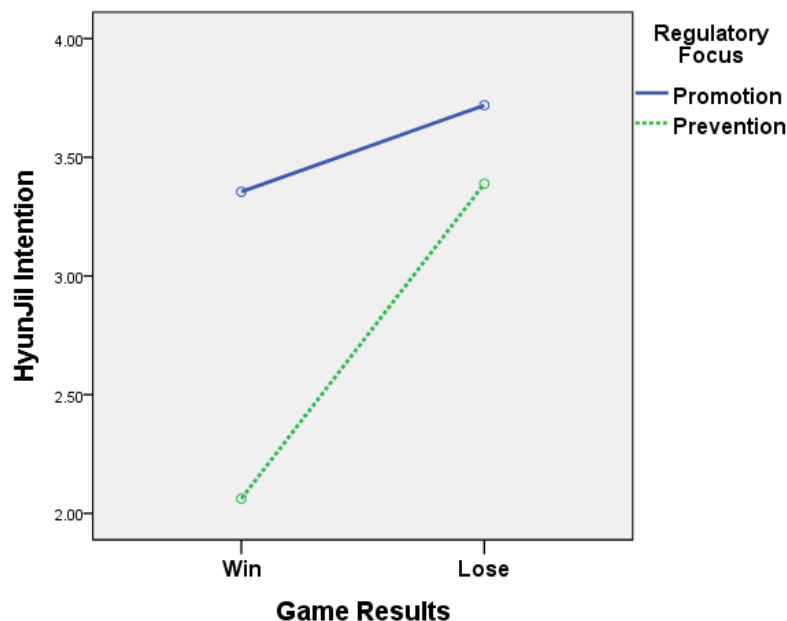


FIGURE 1. The interaction effect

4. Conclusions. While online in-game items are a good source of profit for online game companies, they have also been cause for debate. As a result, South Korea's game industries have been regarded with ambivalence in the society. However, gaming behavior may require a broader conceptualization of its motivational and cognitive features [16]. As in-depth research on buying online game items, this study involved exploring how gamers' regulatory focus affects their purchase intentions regarding online in-game items.

This study showed that purchase tendency was greater after losing than winning, as well as that promotion-oriented gamers buy more in-game items than prevention-oriented gamers. Accordingly, this study revealed an interaction effect between the results of winning or losing a game and the gamer's regulatory focus. After all, whereas promotion-oriented gamers have high purchase tendency regardless of whether they win or lose, prevention-oriented gamers have considerably higher purchase tendency after they lose.

To be specific, the winner prevention-oriented gamers did not feel a need to *hyunjinil* because of the absence of negative results. Furthermore, it could reveal that the addictive purchasing of in-game items occurs more among promotion-oriented than prevention-oriented gamers. However, this study had several limitations. First, though the sample size was not too small for a model for testing variances by group, a bigger sample size would have been better. Second, this study did not consider the type of games, which could affect the different *hyunjinil* purposes. Future researchers should classify online game item purchase intentions according to the types or characteristics of online games.

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