An Examination of Gender Differences in Happiness Perceived by Japanese University Students in Games

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INTRODUCTION
There are approximately 3,000 million active game users worldwide (Statista, n.d.). Games can significantly influence users’ behavior; thus, it is essential to enhance the positive effects of games and address their negative impacts. Recently, concern has been expressed regarding the association between violent games and aggression (Digital Culture 2019). Affect associated with gaming could significantly affect gamers’ mental health. Therefore, it is crucial to research the effects of games on users’ affect.

Happiness can be divided into “subjective” and “objective” aspects (Frey and Stutzer 2002). Seligman (1998) proposed positive psychology, which focuses on happiness. Women tend to have a higher sense of happiness than men (Diener et al. 1999). Other studies reported gender differences in happiness (e.g., Chui and Wong 2016). Gender
differences in happiness regarding games have essential implications for game development.

Johannes et al. (2021) reported a weak positive correlation between game-playing duration and happiness in users playing “Plants vs. Zombies: Battle for Neighborville” and “Animal Crossing.” This result refutes the conventional view that users who spend more time playing games are more likely to become addicted and experience impaired health. Veltri et al.’s (2014) review indicated similarities and differences in game selection, motivation, play behavior, and performance between men and women.

Thus, while there are studies of gender differences in happiness, gameplay, and the relationship between gameplay and happiness, no studies have assessed gender differences in happiness related to gaming. Games exist in many different platforms, genres, and play styles, and gender is unlikely the most critical factor in gaming. Nevertheless, it is essential to consider gender differences in happiness to enhance future game development. Therefore, we conducted a survey focusing on gender to clarify the status of gaming-related happiness to obtain basic knowledge for future game development.

METHODOLOGY

Survey Targets and Survey Procedure
An online survey was conducted in September 2022 among students at two private universities in Japan. There were 134 valid responses (66 men and 68 women; the valid response rate was 97.10%, 134/138). The survey was conducted anonymously. We explained to the respondents that participation was voluntary, that they would not be disadvantaged if they did not respond, and that they could stop responding at any point during the survey.

Measurement Items
We asked the following questions, where “games” denoted digital games, including smartphone games; we did not define happiness in advance.

1. What scenes in the games you have played have made you feel happy?
2. In what kinds of games have you felt happy?
3. What type of interaction (communication) in games have you played so far that made you feel glad?

Analysis
Free responses to the questions were analyzed using KH-coder 3 to create a co-occurrence network diagram. Differences in the factors that make men and women feel happy while gaming were examined. Items were selected after discussion among the authors using m-GTA.

RESULTS AND DISCUSSION
The features of happiness felt by men and women are shown in the co-occurrence network of Figure 1. We extracted from Figure 1 the characteristic elements and comments. Table 1 lists the aspects of happiness common to men and women, those strongly observed in men, and those strongly observed in women.
From these results, the typical responses for both men and women were “communicating with friends in the game,” “getting good items and characters in the gacha,” “playing the game well,” and “clearing the game.” Men selected “clearing difficult games” and “winning against opponents.” Women tended to feel pleasure “when communicating in games with less competitive elements,” “playing games with favorite characters,” and “pulling out gachas related to favorite characters.”

The results suggest that men and women position themselves differently when playing games with competitive elements. This can be considered a significant factor in developing games that target specific genders. Additionally, using materials that incorporate competitive and non-competitive elements may be necessary when teaching with games.

Thus, it may be feasible for game developers to use the knowledge of gender differences to increase users’ well-being and interest in games. To achieve this, developers must first acquire the ability to select materials and consider elements that include gender differences.

**CONCLUSION**

This study investigated gender differences in happiness associated with gaming and obtained basic knowledge to inform game development and education of student developers. We found gender differences in game-related happiness and clarified the factors that contribute to these differences.

However, the study has some limitations. First, it revealed gender differences in game-related happiness based on free text descriptions but did not identify the factors contributing to these differences. In this regard, differences in happiness may be due not only to gender but also to hobbies and preferences, previous gaming experience,
duration of gameplay, the influence of other game players, and differences in gaming platforms owned by players. Examining these factors and clarifying how to promote a sense of happiness in gaming are also necessary. Additionally, conducting similar surveys in countries outside of Japan is necessary to determine whether this study’s results vary across different countries. This will also help in understanding the structure of happiness in games.

<table>
<thead>
<tr>
<th>Element</th>
<th>Element Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Elements Common to Men and Women</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends and communication</td>
<td>Play games and communicate in-game with friends.</td>
<td>- Play and chat with friends while connecting to voice chat</td>
</tr>
<tr>
<td>Gacha to get item and character</td>
<td>Gacha gives you the character or item you want.</td>
<td>- I get a character/item I like/want in a gacha</td>
</tr>
<tr>
<td>Good gameplay</td>
<td>I could play well, and in a way, I had never been able to before.</td>
<td>- I was able to make a “good play (a good play)” or a play that I had not been able to make before.</td>
</tr>
<tr>
<td>Game achievement</td>
<td>Complete specific goals in the game, such as defeating enemies and complete the game</td>
<td>- Defeat the boss/enemy</td>
</tr>
<tr>
<td>2. Elements in Men</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online and PVP games</td>
<td>Work on games that focus on competing with other players online. (e.g., Splatoon, VALORANT, APEXLEGENDS, Super Smash Bros, and Pokemon)</td>
<td>- Defeated enemies in APEX, played with friends and won.</td>
</tr>
<tr>
<td>Beat their opponents</td>
<td>Winning against other players</td>
<td>- Beat them all in VALORANT. Won, got ranked up.</td>
</tr>
<tr>
<td>Raise my rank</td>
<td>Raising my in-game rank</td>
<td>- I got ranked up in Splatoon.</td>
</tr>
<tr>
<td>Tackle difficult games</td>
<td>Achieving difficult in-game quests, or missions.</td>
<td>- I killed a strong opponent.</td>
</tr>
<tr>
<td>3. Elements in Women</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Games with few elements of competition with other players</td>
<td>Working on games with less competitive elements with other players (e.g., Dragon Quest, Disney Tsum Tsum, Touken Ranbu, Animal Crossing)</td>
<td>- When I took a stroll, or when I won the jackpot at the casino in Dragon Quest.</td>
</tr>
<tr>
<td>Favorite characters, items, and events</td>
<td>Drawing in events, items, and gacha of your choice.</td>
<td>- When I got lucky in Tsum Tsum, got a high score, or got a character I wanted in a gacha.</td>
</tr>
<tr>
<td>Full combo, score in sound game</td>
<td>Achieving a full combo or breaking my own score, mainly in sound games and Disney Tsum Tsum.</td>
<td>- When I got a new character in Touken Ranbu.</td>
</tr>
</tbody>
</table>

Table 1: Elements and examples of happiness.

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BIBLIOGRAPHY


