

An Empirical Study on Gender Switching of MMORPG Players

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Abstract: In this study, we explored the players' behavior of gender switching in a MMORPG game. The empirical data is come from the *Soul of Magic online game* and 65,407 samples were collected for analysis. With regard to the gender of avatars, 37,031 players (56.60%) selected male avatars while 28,376 players (43.40%) selected female avatars. With regard to the gender of players, there were 49,398 males (75.50%) and 16,009 females (24.50%). The result reveal that there were significant differences between the genders of the players who chosen the gender of avatars. One third of male players chose female avatars and one fourth of female players chose male avatars. Among the age layers, 50.17 to 66.12 percent of female avatars are played by male players while 5.85 to 23.60 percent of male avatars are played by female players. According to the result, the gender switching in online games happens more on male players than on female ones.

Keywords: Gender switching, MMORPG, Gender Role, Soul of Magic Online Game

Introduction

Previous studies mentioned that there were 1.5 million players in Habitat, one of the MUDs. The percentage of male and female players was approximately 4:1, while the gender of the avatars was 3:1. This suggests that players have the behavior of switching their gender in online games. The world of Internet has become another virtual environment of social networks, where the players can play a brand new character which is totally different from themselves [4]. There have no consistent answers to the question that why players switch their gender in online games. Therefore, this study aims to explore the behavior of gender switching under different background variables, such as the gender and different age layers of players.

1. Literature Review

1.1 Massively Multiplayer Online Role-Playing Game (MMORPG)

MMORPG is a role-playing game, which include features of direct interactions between the provided service and the game; players are able to interact with others for fun via synchronous connection; and enjoy the fun of the virtual characters [6, 9]. [12] indicated three main factors of MMORPG: doing quests and achievements, interacting with other players and "leveling-up" the avatars. Therefore, MMORPG has a main story and quests, the players interact with other players and solve the quests, different results would be revealed afterward. MMORPG has the characteristics as below: enabling people to interact closely, real game background and rules, as well as high indulgence and imagination [7].

The virtual worlds where players are in are filled with avatars of other real players. Players could also easily interact with others through the avatars.

1.2 Gender Role

[5] indicated that gender role is the behavior, interests and attitudes that a society considers suitable for males or females. [8] collated thousands of research and found that the different gender has significant differences on the two traits below: males are far more aggressive than females, and females are more talented on languages and weaker on spatial ability than males. Different gender roles are given with different stereotypes respectively. [2] proposed two theories about the formation of stereotypes on gender roles: the kernel of truth theory refers to the essential difference such as physical structure, and stereotypes are just the outcome of exaggerating those differences; social-role theory is proposed due to the two genders' adoption of different social stereotypes, which is the basic assumption of the characteristics of the two genders in a society. Different gender behaves differently and forms the gender stereotypes.

1.3 Gender Switching

Gender switching refers to the behavior of challenging, transcending or reversing part or all of the players' original gender roles on Internet or online games. The possible reasons of gender switching, the players choosing the opposite gender for his or her avatar, are a lot of researchers interested in. [13] proposed the possible reasons of males' gender switching: the desire to get rid of socially-agreed male stereotypes, the possibility to obtain attentions on Internet, to learn and explore the question of getting along with the difference gender, gaining benefits from the game, to find the feeling of intimacy with difference gender, and failure of gender recognition, and other study suggested that the reason of male's choosing a female avatar is just to balance male and female in a game. [1] found that male players try a different gender avatar is just for the reason of fun and novelty. On the other hand, the possible reasons for female players to switch their genders are as following: to understand how other females interact with males, to be a hero, to have more leadership in a game, and to experience the power which they are not able to have in reality. [10] pointed out that sometimes female players chose avatars of opposite gender to avoid harassment from male players.

2. Methods

2.1 Research Hypotheses

According to literature review, two hypotheses are proposed:

H1: Players of different genders show differences on choosing game avatars.

H2: Players of different age layers show differences on choosing game avatars.

2.2 Data Collection

The empirical data is collected from the *Soul of Magic online game* in this research. *Soul of Magic online game* is a cartoon-style and fantastic MMORPG which produced by Lager Network Technologies. Players create their male or female avatars and decorate it in different clothes, hats, and so on. In this game, players solve the quests and reach to higher

levels with other players together. The screenshots of the online game are shown in Figure 1.



Figure 1 Screenshots of the *Soul of Magic* online game

There were 65,407 data collected for analysis. The variables include: the player level, the gender of avatars, average time spent on games (minutes), the amount of money spent on buying credits, joining the community (yes or no), the gender of players, age of players, and residential area of players. A detailed explanation is as follows.

In respect of the players level, the lowest level is 1 while the highest level is 57. The average level is 16.14 (SD=8.82). With regard to the gender of avatars, 37,031 samples (56.60%) selected male avatars while 28,376 samples (43.40%) selected female avatars. As for the average time spent on games, it spans from 0 to 1,364 minutes. The average time among the samples is 185.72 minutes (SD=227.58). Regarding the gender of players, there are 49,398 males (75.50%) and 16,009 females (24.50%). As for the age of players, the youngest players are aged 8 whereas the oldest are 89. The average age is 25.27 (SD=7.61). This research grouped the age of players as follows: aged 14 and under, aged 15-17, aged 18-22, aged 23-30, aged 31-40, aged 41-50, aged 51 and older. There are totally 7 age layers. The distribution of age layer is listed in Table 1.

Table 1 Age layers distribution

Age layer	Count	Percent (%)
under 14	3754	5.7
15-17	4829	7.4
18-22	16237	24.8
23-30	26462	40.5
31-40	12239	18.7
41-50	1413	2.2
over 51	473	.7
total	65407	100.0

3. Results

3.1 Gender Role and Gender Switching

In H1, it is assumed that different gender players chose different gender avatars. The percentage of gender of players in the game is as following: 49,398 males (75.50%) and 16,009 females (24.50%). The percentage of gender of the avatars is as following: 37,031 males (56.60%) and 28,376 females (43.40%).

The result of χ^2 test is person $\chi^2 = 10159.07$, $p < .01$. It is confirmed that the difference on choosing the gender of avatars actually existed. According to Table 2, one third of male

players chose female avatars while the others chose male ones. As for female players, one fourth of them chose male avatars and three fourth of them chose female ones.

Table 2 Sex role and character gender cross table

Character gender	Gender role		Total
	Female	Male	
Male	3571	33460	37031
Female	12438	15938	28376
Total	16009	49398	65407

3.2 Age Layer and Gender Switching

In H2, it is assumed that players of different age layers chose different avatars in a game. Figure 2 displays the histogram of the gender of the chose avatars of different gender players in each age layer. The result of χ^2 test indicates under each age layer, it is significant that players chose avatars of opposite gender.

Table 4 Pearson χ^2 test on the genders of chose avatars of different gender players in each age layer

age layer	Pearson χ^2	p
under 14 age	907.6298	.000
15-17 age	1219.959	.000
18-22 age	3333.666	.000
23-30 age	3426.188	.000
30-40 age	1308.056	.000
41-50 age	198.3214	.000
over 51 age	16.56925	.000

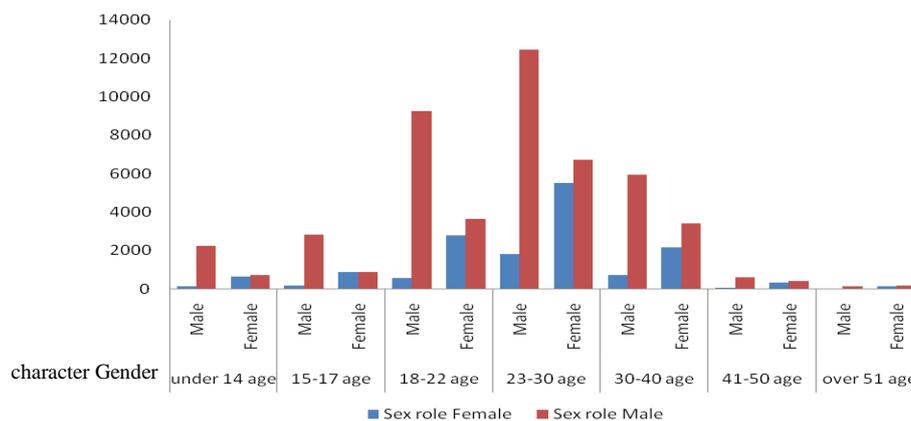


Figure 2 The histogram of gender of the chose avatars of different gender players in each age layer

4. Discussion

This research aims to explore the behavior of MMORPG players' gender switching. The result suggests that there is a significant difference between the gender of the players and the chose avatars ($\chi^2= 10159.07$, $p<.01$). One third of male players chose female avatars and one fourth of female players chose male avatars. There is also difference in players' chose gender of their avatars in different age layers. Among the age layers, 50.17 to 66.12 percent of female avatars are played by male players while 5.85 to 23.60 percent of male avatars are played by female players. According to the result, the gender switching in online games happens more on male players than on female ones. It is necessary to conduct further studies

to investigate the reasons of gender switching, such as to get more attention, to obtain benefits, to balance the gender percentage of the character, or just for fun and novelty.

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