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**A cross-genre study of online gaming: Player demographics, motivation for play, and social interactions among players**

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## Abstract

One key limitation with the contemporary online gaming research literature is that much of the published research has tended to examine only one genre of games (i.e., Massively Multiplayer Online Role Playing Games). Three relatively little studied online games are First Person Shooter (FPS) Games, Role Play Games (RPG) and Real Time Strategy (RTS) Games. Therefore, the current study aimed to examine player behaviour and characteristics in these three different online gaming genres. More specifically, the study examined the differences between the three different game genres in terms of: (i) the demographic profile, (ii) the social interactions of players including the number and quality of friends, and how gaming related to real life friendship, and (iii) motivations to play games. The sample comprised 353 self-selected players (156 who played FPS, 119 who played RPG and 78 who played RTS). The RPG genre had the highest percentage of female players. The number of hours played per week varied significantly between the genres. RPG players played significantly longer hours than FPS or RTS players. In relation to playing motivation, achievement levels were highest for the FPS genre with RPG genre having the lowest achievement levels RPG players had the highest immersion levels. RTS players were significantly less likely to report having made friends than players of the other two genres.

## Introduction

The last decade has witnessed the introduction of affordable internet access with high bandwidth connections. This has led to a change in the way gaming is played and has allowed a greater numbers of gamers to connect and play with one another (Griffiths, Davies & Chappell, 2003). This has resulted in a number of different game genres that have the capacity to be played online. One of the most popular genres are the Massively Multiplayer Online Role Playing Games (MMORPGs) such as *World of Warcraft*, MMORPGs are sophisticatedly-developed, large, virtual environments where millions of users interact with each other through avatars that they create within the game on a daily basis (Cole & Griffiths, 2007).

As a result of these fast evolving technological developments, researchers began to adapt their line of research, focusing on the newly developed MMORPGs (e.g., Cole & Griffiths, 2007; Griffiths et al., 2003; Griffiths et al., 2004a; 2004b; Meredith, Hussain & Griffiths, 2009; Ng & Wiemar-Hastings, 2005; Yee, 2006). Griffiths et al. (2003) noted three different types of “social virtual gaming” (p. 82) that had emerged, but chose to focus primarily on the development of MMORPGs. Using secondary data from polls hosted by two fan-sites dedicated to the MMORPG *EverQuest*, the researchers began to form some benchmark for the profile of an MMORPG player.

For instance, Griffiths et al. (2003) found that, although MMORPGs were predominantly played by males, there was a significant minority of female players (15%), and that around three-quarters of players were over 21 years of age. Both these findings contradicted the stereotypical profile of an adolescent male video game player. These results were further supported by subsequent research during the 2000s (e.g., Chang, Lee & Kim, 2006; Griffiths et al, 2004a; 2004b; Hussain & Griffiths, 2008; 2009; Grüsser, Thalemann, Albrecht & Thalemann, 2005; Grusser, Thalemann & Griffiths, 2007; Meredith, Hussain & Griffiths, 2008; 2009; Hsu, Wen & Wu, 2009; Ng & Wiemer-Hastings, Yee, 2006a; 2006b) although some research has specifically looked at online gaming among much older people (Pearce, 2008). Most of the research into MMORPGs also indicated that the most important

reasons for engaging in such games were social (i.e., to play and meet other like minded people). Based on the collation of secondary data, Griffiths, et al (2003) noted that there were many different types of players including explorers, role players, power levellers, and socialisers. Research by Yee (2006a; 2006b) pointed out that females may be motivated to play for social reasons such as grouping and helping others, whereas males may be more concerned with power levelling and game success.

A study by Cole and Griffiths (2007) reported that social interactions in MMORPGs can be seen both within the game and in real life. They reported that players were likely to have made 'good friends' within the game, many of which had met up in real life. Some of these people were also likely to have been attracted to another player within the game and have had reciprocation of their feelings. Furthermore, high levels of disclosure were reported between online players. The study found that instead of MMORPGs being socially isolating, they can be played to incorporate friends and family into the activity, and were likely to rate the games as having a positive effect on the relationship of people who play the same games.

Despite a significant increase in online gaming research, much of the research into online gaming has tended to concentrate on MMORPGs apart from studies that have examined gender and type of game played (e.g., Carr, 2005; Ko, Yen, Chen, Chen & Yen, 2005; Feng, Spence & Pratt, 2007; Jansz & Tanies, 2007; Hartmann & Klimmt, 2006; Joiner, Iacovides, Owen, et al, 20011).

It has long been noted in the gaming literature that, when conducting research into video gaming, it is important not to focus too specifically on one type of game or social context (Griffiths, 1993). For instance, Sherry, Lucas, Greenberg and Lachlan (2006) reported that video game uses and gratifications were a strong predictor of game use and of genre preferences among games. Some research has examined different facets of online gaming. Jansz and Martens (2005) carried out an exploratory survey about what types of people play at a Local Area Network (LAN) event. Their results showed that LAN gamers played for approximately two and half hours a day, were almost exclusively male, and had a mean age of just below 20 years. Jansz and Martins concluded that when examining online gamers it is

important to take into account the social context of gaming. More recently, Kallio, Mäyrä and Kaipainen (2011) reported the results of a three-year study and showed that the majority of online gaming is situated somewhere between “casual relaxing” and ‘committed entertaining’. They concluded that online gaming is a multifaceted social and cultural phenomenon that is understood, practiced, and used in various ways.

Three little studied online games are First Person Shooter (FPS) Games, Role Play Games (RPG) and Real Time Strategy (RTS) Games. FPS games portray 3D environments that are viewed as if through the eyes of the character, with usually only the weapon being depicted. The majority of FPS games produced (e.g., *Return to Castle Wolfenstein*) have both a ‘single player mode’ and a ‘multi-player mode’, in which the player can connect to other players via a server (Griffiths, Davies, & Chappell, 2003). The online game usually incorporates some form of team play in which one team must complete the objective faster than the opposition. However, it must also be noted that there are a wide variety of scoring mechanisms depending upon the particular FPS. Online play has led to the formation of ‘clans’ (Griffiths, Davies, & Chappell, 2003), whereby players group together in order to compete against other clans. Voice chat programmes such as *TeamSpeak* can be used to enable the clans to communicate quickly with one another during game play.

The RTS genre differs from ‘turn-based’ strategy games (such as chess), with players having to respond to events as they occur. RTS games differ from FPS games in that the camera angle is positioned in a ‘birds-eye view’ of the virtual environment. Players control many characters (units) at the same time as having to maintain a stable economy in order to defeat an opponent. Similarly to FPS games, these games often have both a ‘single player mode’ and a ‘multiplayer mode’. The multiplayer mode closely resembles the structure of the single player mode, except players are pitted against other human players online. As with FPS games, players can team up to play against others. However, whilst FPS servers can support up to 30 people per team, RTS servers are not designed to support more than 6 to 8 players per team.

Finally, RPGs are very similar in design to MMORPGs, the main difference being that RPGs have the capacity to connect a smaller number of players, for instance,

64 players in the case of *NeverWinter Nights*, rather than thousands of people as with MMORPGs (Griffiths et al, 2003). The camera angle in RPGs differs from FPS games and RTS games. The character is seen in an ‘over-the-shoulder’ view, from just above the character’s head. RPGs have single player story-modes as well as multiplayer modes. RPGs usually allow the player to choose from a variety of races, professions, moralities and genders (Hussain & Griffiths, 2008) and provide vast virtual environments in which to explore. Game play is based around gaining skills and abilities through completing quests and defeating opponents. The player is encouraged to ‘level-up’ the character to broaden the environment of the game. Social interactions are a big part of the game and may be considered obligatory in order to complete objectives (Hussain & Griffiths, 2008).

One key limitation with the contemporary online gaming research literature is that direct comparison of game genres across a wide range of variables are rare in the psychological literature.. An unpublished study by Chappell (2004; cited in Griffiths, et al, 2004a) suggests a lower percentage of female players in the FPS game *Quake3* (7%), than the 15% observed in MMORPGs. Chappell also suggest that FPS games may have a younger clientele. It is not difficult to see why during the last decade much research has focused on MMORPGs, as these types of game provide researchers an arena in which they can examine interesting and novel social interactions between people. However, conclusions drawn from these games alone are insufficient to provide a complete profile of people who play online games. Indeed, Griffiths et al (2004a) highlighted the need for their research on MMORPGs to be replicated with other types of game and states that other online games may attract different types of socio-demographic clientele. Furthermore, King and colleagues (2010; 2011) have also argued that particular structural characteristics of video games may influence player behaviour and that when researching the effects of gaming, researchers need to take into account game features and genres. Such reasons provide a good rationale for a more inclusive comparison of different gaming genres.

The current study aimed to examine three different online gaming genres (i.e., FPS, RTS and RPG) in three different areas. More specifically the study sought to examine the differences between the three different game genres in terms of: (i) the demographic profile, (ii) the social interactions of players including the number and

quality of friends, and how gaming related to real life friendship, and (iii) motivations to play games. Beyond gender differences, no specific primary data exists for FPS, RTS or RPG so there were no specific hypotheses and the research is considered as exploratory.

## Method

*Participants:* The sample comprised 353 self-selected players (156 who played FPS games, 119 who played RPGs and 78 who played RTS games). The sample was 90% male ( $n=320$ ). The sample was between 12 and 62 years with a mean age of 22.47 years ( $SD= 8.94$  years). Of those who gave their country of residence, 34% were from the United States ( $n=120$ ), 8.2% from Canada ( $n=8.2\%$ ), 19.8% from UK (19.8%), and 29.7% from other European countries ( $n=105$ ). The majority of the players were students (56%) and single/not in a relationship (58%).*Materials:* An online questionnaire comprising three sections was self-devised. The first section asked for information about the player demographics (age, gender, occupation, country of residence, marital status, education, genre and frequency of play). The second section asked questions about social interactions and about number and quality of friends, and how gaming related to real life friendship. The final section examined motivations to play games. A scale based on Yee's (2006) research into the motivation of playing online computer games was devised. This part of the questionnaire was split into social, immersion and achievement factors of gaming. Questions assessing whether the player played for the sense of achievement, social elements within the game or the immersion value of the game were combined within the appropriate motivation category. A scale was formed from the combination of these questions, from '1' (low motivation) to '7' (high motivation).

*Procedure:* Following a small pilot study, a questionnaire posted on over 40 dedicated FPS, RPG and RTS servers. The hyperlink, alongside a brief explanation of the study was always placed in the 'Off-Topic' or equivalent section of a gaming forum, with permission from the site administrator when required. Regular re-posts were made to the forums so that the call for participating players was near the top of the post lists. Respondents were informed that participation was voluntary, confidential, and that to withdraw they could simply close their browser at any time.

Questionnaires with duplicated answers were removed, along with questionnaires that had more than 50% of responses missing.

## Results

*Demographic variables:* A one-way ANOVA showed a significant difference between the ages of players across the three genres ( $F(2,198)=11.9; p<0.001$ ). Table 1 shows that the age of RPG players was significantly older than FPS and RTS players ( $p<0.001$ ). There was no age difference between FPS and RTS. There was a significant association between the gender of players and the game they play ( $\chi^2(2)=24.0; p<0.001$ ). Table 1 shows that RTS games and FPS games were played almost exclusively by males. However, Gabriel post-hoc tests did not reveal any significant difference between these two genres. However, there was a significant difference between both the FPS and RTS genres compared to the RPG genre ( $p<0.001$ ). The RPG genre had the highest percentage of female players (71%). The number of hours played per week varied significantly between the genres ( $F(2,201)=12.3; p<0.001$ ). RPG players played significantly longer hours than FPS or RTS players ( $p<0.001$ ). There was no significant difference between RTS and FPS players.

INSERT FIGURE 1 AND TABLES 1 AND 2 ABOUT HERE

Results showed a significant association between age and gender ( $\chi^2(41)=58.4; p<0.05$ ). Figure 1 shows the age bracket with the highest percentage of female players was 21-25 years, whereas for male players it was 16-20 years. There was a significant association between how long a participant had played the game and which genre they played ( $\chi^2(12)=40.0; p<.001$ ). The majority of RTS players had played for 1-2 years, whereas the majority of FPS and RPG players had played for 3-4 years (see Table 2).

*Playing hours per week and game genre:* For each genre, a regression analysis was performed for the number of hours played per week. The following variables were included as possible predictors: playing history, number of friends, number of acquaintances, immersion levels, socialisation levels and achievement levels.

Regression analysis revealed that the number of 'good friends' an FPS player had significantly predicted the hours spent playing ( $F(2,125)= 9.7, p<0.001$ ), and accounted for 16% of the variance. The number of friends an RPG player had in the game significantly predicted the hours a participant spent playing per week ( $F(2,107)= 4.6, p<0.05$ ), and accounted for 8% of the variance. For RTS players, the playing history together with the number of acquaintances a player knew significantly predicted how many hours per week they played ( $F(6,54)=2.3; p<0.05$ ).

*Motivational variables:* Results revealed significant differences between the genres in terms of whether participants played for reasons relating to achievement ( $F(2,337)=16.0; p<0.001$ ). Figure 2 shows that achievement levels were highest for the FPS genre with RPG genre having the lowest achievement levels ( $p<0.001$ ). A significant difference was found between the RPG and RTS genres ( $p<0.05$ ). There was no significant difference between FPS genre and RTS genre ( $p=0.056$ ).

Results also showed significant differences between the game genres in terms of whether participants played to socialise within the game ( $F(2,321)=10.54; p<0.001$ ). There was no significant difference between the FPS and RPG genres (see Figure 2). However, the RTS genre was significantly lower than both other genres ( $p<0.001$ ). Results revealed significant differences between the genres in terms of whether participants played for the immersion value of the game ( $F(2,323)=7.1; p<0.001$ ). Figure 2 shows that RPG players had the highest immersion levels. This was significantly different from the FPS genre ( $p<0.001$ ). There were no significant differences between RTS games and the other two genres.

#### INSERT FIGURES 2 AND 3

Tests revealed significant association between level of achievement and gender ( $\chi^2(12)=21.04; p<.05$ ). Figure 3 shows, males rated achievement as a motivation for play more highly than females did. There was no significant association between the level of socialisation within the game, and gender ( $\chi^2 (24)=26.2; p=.3$ ). Females were no more likely to play for social reasons within the game than males.

*Social variables.* There is no significant difference between RPGs and FPS games in terms of whether players had made ‘good friends’ within the game. RTS players were significantly less likely to report having made friends ( $p < 0.001$ ) than players of the other two genres (see Table 3). Table 3 also shows that participants in the FPS genre had a significantly higher number of good friends within the game than the RPG and RTS genres ( $p < 0.001$ ). RTS participants had the lowest number of friends but did not differ significantly from the RPG participants.

INSERT TABLE 3 ABOUT HERE

Whether friends were part of the same clan or guild as the participant differed between the game genres ( $\chi^2(2) = 22.4; p < 0.001$ ). Table 3 shows that the likelihood of friends being in the same clan or guild was equal for both the FPS and RPG genres, with no significant difference between the two. However, Table 3 shows that RTS participants were significantly less likely to have friends who were in their clan or guild ( $p < 0.001$ ).

Table 3 shows that the RPG and FPS players made a similar number of acquaintances, and did not differ significantly. However, it also shows that RTS players reported having made significantly fewer acquaintances than the other two genres ( $p < 0.05$ ). Table 3 also shows that RPG players had the highest positive response rate to whether they had ever been attracted to anyone within the game, and was significantly different from both the other two genres ( $p < 0.05$ ). FPS players’ responses were slightly lower, and RTS players’ responses even lower. However, there were no significant differences between these two genres.

Table 3 shows RPG players were most likely to have dated someone in real life. This differed significantly from the respondents in the RTS genre, where players were unlikely to have dated in real life ( $p < 0.05$ ). The FPS players’ responses were slightly higher than RTS players in terms of having dated someone from the game. However, there was no significant difference between the RTS and the FPS players or FPS and RPG players. There was no significant difference between the player genres when players were asked if they liked to play with friends and family within the game ( $\chi^2(6) = 12.0; p = 0.06$ ). There was a significant difference between the game

genres in terms of whether a player was more likely to discuss sensitive issues with friends within game than with friends in real life ( $\chi^2(4)=21.1, p<0.001$ ). There were significant differences between the RPG and RTS player ( $p<0.05$ ) but no difference between the other genres.

Results revealed significant differences between game genre and comparability of online and real life friends ( $\chi^2(2)=7.9; p<0.05$ ). There was a significant difference between the RPG players, who were most likely to state that their friends were comparable and the FPS players, who were least likely to say that friends were comparable ( $p<0.05$ ) (see Table 3). RTS players were only slightly more likely to rate friends more comparable than FPS players, and did not differ significantly from either FPS or the RPG players.

There was a significant difference between the genres in terms of players meeting up in real life ( $\chi^2(12)=3.7; p=0.001$ ). As Figure 4 shows, the RPG and FPS genres were similar in terms of the players meeting up, there was no significant difference. However, there was a significant difference between RTS players and players of the other two genres ( $p<0.001$ ). Players from this genre were much less likely to report a strong likelihood of meeting in real life.

INSERT FIGURE 4 ABOUT HERE

There were significant differences between the three genres in terms of why people would meet in real life ( $\chi^2(10)=29.3; p<0.001$ ). Figure 5 shows that RTS players were more likely to gather for a Local Area Network (LAN) meeting than other genres. Conversely, FPS and RPG players appeared more likely to meet up for a guild/clan meeting than RTS players. All of the player groups appeared likely to meet within or with one or two other people or a small group. However, post-hoc tests could not confirm significant differences between any of the three game genres.

Results showed that there were significant differences between the genres in terms of whether participants are likely to play their game with friends and family ( $\chi^2(10)=7.6; p<0.05$ ). Figure 6 shows that the majority of responses from all game

genre players stated that they played the game primarily with friends. A slightly higher percentage of RPG participants said that they played with both friends and family. However post-hoc tests did not reveal any significant differences between any of the genres.

INSERT FIGURES 5 AND 6 ABOUT HERE

There was no difference between the genres in terms of whether playing had a positive or negative effect on relationships within the game ( $\chi^2(8)=11.86$ ;  $p=0.158$ ). Figure 7 shows that players from each genre regarded playing games as having a positive effect on those playing the same games. Further results revealed a significant difference between the genres in terms of whether playing had a positive or negative effect on real life relationships ( $\chi^2(8)=12.23$ ;  $p=0.141$ ). Figure 8 shows the majority of players from all genres stated that the game had no significant effect on those who did not play the game.

Results revealed a significant difference between genre and comparability of online and real life friends ( $\chi^2(4)=21.1$ ;  $p<0.001$ ). Figure 9 shows that the majority of FPS and RTS players said that real-life friends were more trustworthy, with a large proportion saying that they were equally as trustworthy. There were no significant differences between the two genres. However, RPG players differed in this as almost half of the players said that real life friends were more trustworthy, and just under half said that both real life and online friends were equally as trustworthy. There was a significant difference between the RPG and FPS players ( $p<0.05$ ) but not between RPG and RTS players.

INSERT FIGURES 7, 8 AND 9 ABOUT HERE

## **Discussion**

The discussion summarises the results, but does not add much in terms of overarching insights or possible explanation of the results.

This study examined whether there were any player similarities or differences between three different genres of online games. The RPG genre most closely resembles data found elsewhere on MMORPGs. The average age, gender breakdown (80% male), the length of time they had been playing games, and average number of hours played per week (24 hours per week) of RPG players matched previous research (e.g., Cole & Griffiths, 2007; Griffiths, Davies & Chappell, 1993; 1994; Yee, 2006a; 2006b). The female players were older than male players across the three genres. However, motivational and/or cultural differences between players may perhaps partly explain some gender and/or age differences.

FPS players differed from the RPG players. They were on average four years younger, mostly male (95%), and spent almost nine hours less per week online, compared to RPG players. However, similar to RPG players, FPS players had also played the game for three to four years. Players of RTS players were much younger than the RPG players but male-dominated. RTS players differed from the other two playing genres in that players only spent 14 hours a week playing compared to the 24 hours a week by RPG players.

The difference between the game genres in how long a player spends within the game appeared to be influenced by play history (i.e., how long they had been playing). However, the number of friends (for both RPG and FPS players) and number of acquaintances (for RTS) better predicted how long participants spent playing weekly. This could have important implications on gaming addiction studies. RPG players did not seem to be driven from a motivation to achieve within the game, but rather for the immersion and the social elements. It was found that males were significantly more likely to play to achieve within the game. Contrary to previous research (Griffiths et al., 2003) it appears that both females and males enjoyed this aspect of the game.

FPS players enjoyed achieving within the game (compared to RPG players) as well as being immersed in the game (but not as highly as the RPG players). FPS players appeared to enjoy socialising within the game just as much as RPG players. The fact that FPS players enjoyed achieving within the game to a greater extent may reflect a fundamental difference in game design, and/or may reflect the fact that there were

fewer FPS female players when compared to RPG players, who are less motivated to achieve within the game. RTS players differed from RPG and FPS players. RTS players also enjoyed playing in order to achieve and be better than others, as well as being immersed. However, in contrast, they did not seek to socialise within the game. These results demonstrate that players from different game genres were motivated to play for differing reasons.

In respect to socializing, this study found a higher percentage of RPG players made good friends compared to MMORPG players in other studies (e.g., Cole & Griffiths, 2007). It could perhaps be that the larger volume of players in MMORPGs actually *reduces* the likelihood of players making friends as they are less likely to encounter the same people. However, the findings here relating to the number of friends made within game by different genre game players concurs with previous research (Cole & Griffiths, 2007). About half of the RPG players were in a clan or guild with other friends. This could reflect the players' length of time they had played the game, or the nature of the game in its ability to create clans and guilds. However, given the study found age and gender differences between the various genres, and these differences might partly explain the difference in social preferences.

The percentage of players likely to discuss sensitive issues was higher than MMORPG players in other research (Cole & Griffiths, 2007). RPG players were more likely to regard online and real life friendships as comparable than MMORPG players, but were the same when regarding real life friends as more trustworthy (Cole & Griffiths, 2007). RPG players were most likely to meet up in real life and like MMORPG players were likely to meet in a small group, but were unlikely to gather for a LAN-meeting (in order to play the game in the same vicinity as one another). This study reported higher rates of attraction to others, as well as the occurrence of real life dating than research on MMORPG players elsewhere (i.e., Cole & Griffiths, 2007). As with number of friends, it could be that *fewer* people on the same server may increase the strength of social interactions. The differences between studies may also be due to difference in sample sizes.

FPS players reported having almost twice as many friends as RPG players, although they had a similar number of acquaintances within game. FPS players were equally

as likely to discuss sensitive issues as RPG players and were similar to previous research on MMORPG players when rating whether friends were comparable (i.e., Cole & Griffiths 2007). However they regarded real-life friends as more trustworthy than RPG players. As with RPG players, FPS players were likely to meet up in real life, and would meet in a small group of people. FPS players were less likely than RPG players to be attracted and date others although this may have been due to a lower percentage of females, or the fact that players were not given the option to change their character's gender within the game (Hussain & Griffiths, 2008).

This study showed that FPS players differ from MMORPG players in terms of age and gender, and more closely resemble the classic stereotype of a player (Brian & Wiemer-Hastings, 2005). It has also been found that such players prefer to play games in order to improve at the game itself and to beat other people. FPS players seem to be equally as likely to enjoy socialising within the game as RPG players. However, there appear to be a few differences. For instance, FPS players appeared to have twice the number of good friends within the game compared to RPG players but were less likely to be attracted to other players and date them in real life.

Just more than half of the RTS players (55%) said they had made good friends with someone in the game, which was much lower than the either RPG and FPS players. Predictably, RTS players had fewer friends and acquaintances, and were unlikely to have made friends within a clan. This may reflect a tendency for RTS players not to form clans, but rather to play to achieve within the game. Indeed, it was the first author's experience during the recruitment process that sites dedicated to groups of RTS players were scarce, and of those that were found, the players seemed somewhat reluctant to respond (as indicated by the total number of RTS players being significantly lower than RPG and FPS players)

RTS players were unlikely to discuss personal matters in-game with other players when compared to the other two playing genres. However, as with FPS and MMORPG players, RTS players rated online and real life friends as comparable and also rated real life friends as more trustworthy. There seemed little chance of RTS players meeting in actuality. The majority of those who had met up with players outside of the game had got together for a LAN-meeting rather than meeting with a

small group. This again may reflect the drive to achieve within the game (rather than socialize),

RTS players differ from MMORPG players that have traditionally been the focus of previous research, and both RPG and FPS players. RTS players do not appear to play for social reasons, and as a consequence have fewer social interactions and a weaker intensity of interactions if they do occur. RTS players were least likely of all three game genres to report having been attracted to another and to date a player in real life. However, these figures are only marginally below that of FPS players and again may reflect the fact that there are fewer females, and/or that players cannot elect to play with a certain gender character.

In terms of whether players were willing to involve other friends and family in their gaming, there was a 90% response rate across the game genres. There was also no significant difference between the genres when rating the effect that the game had on people who played the same game. All players said that it had a positive effect. Similarly, all players stated that playing the game did not have a significant impact on people who did *not* play the same game as them. What this implies in terms of isolation within real life is open for further interpretation.

There were, of course, a number of limitations to the present study. In relation to the sample, not only was it self-selected (and therefore not representative of all gamers), there was an unequal distribution of responses over the three game genres. Ideally, the demographic distribution of respondents could perhaps have been calibrated with other sources of data (e.g., player profiles from the online gaming forums used to collect the data). However, this was not possible in this instance. Furthermore, the sample did not include any Asian participants. Given the popularity of online games in countries such as Korea, Taiwan, China and Japan, the findings cannot be generalised to other cultures. In fact, the study's findings have little to say about any cross-cultural comparisons.

Furthermore, the overall sample size is somewhat small in comparison to past research into MMORPGs (e.g., Cole & Griffiths, 2007; Griffiths et al, 2003; 2004), thus findings may not be directly comparable. Furthermore, the method of

distribution of the survey made it impossible to monitor all responses. Given the large number of MMORPG players online, it is likely that some MMORPG players also responded. Although there was no option for the MMORPG genre on the questionnaire, it may be that these players chose the closest category (RPGs), which may have resulted in the RPG genre more closely resembling that of MMORPGs. Results could perhaps have been enhanced by the use of qualitative methods to try and explain and tease out some of the differences found.

There were significantly fewer RTS players when compared to RPG and FPS players. A larger sample and more RTS players may have revealed different findings. However, it seems likely that this small response among RTS players rate may reflect the less-interacting nature of the players. Additionally, the study attempted to draw a distinction between MMORPGs, and non-massively multiplayer RPGs, FPS games and RTS games. However, the names of specific games that participants played were not collected. Therefore, the study was unable to unearth whether there were sufficient differences between these two groups to warrant the separation made by the authors. There is also the possibility that RTS games may have been inappropriately compared to both RPGs and FPS games as the combative nature of some genres may have accounted for some of the findings presented. RTS games are generally non-collaborative and lack narrative and story, and are structured as a series of campaigns. Such differences may also have influenced the results. Given the research by King et al (2011), the results observed may have been partly accounted for by differences in game design, rather than by player characteristics. For instance, some games – by design - may be more conducive to social interaction.

Computer games are forever changing and evolving. It may not be long before completely different genres emerge. Any new emerging game genre should also be examined and researched in terms of player demographics, why they are played, and what social interactions are involved. This study has provided a benchmark for the demographic profile of players from three previously un-researched genres of games, and showed that they are played upon by different types of people (based on their basic demographic characteristics).

In conclusion, the main findings are that RPG players unsurprisingly appear to resemble MMORPG players. The social element is an integral part of the game, and is one of the key reasons for playing (Griffiths, et al, 2003). However, whilst making friends within the game, and transference to meaningful relationship is possible, it has to be noted that these players spend at least whole day of their week within the game. The findings also reveal that, RTS and FPS players comprise a very different clientele and play for different reasons to RPG players. It would appear that having fewer social interactions, results in playing for fewer hours. Such factors as social facilitation may be keeping players in the game longer than if they were playing alone (Cole, Barrett & Griffiths, 2011).

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**Table 1: The demographic variables of players (age, gender and hours played per week for each game genre)**

Demographic Variable	First Person Shooter	Role Play Game	Real Time Strategy
Age (years)	21.5	25.6	19.6
Gender			
<i>Male</i>	94.9	80.5	98.7
<i>Female</i>	5.1	19.5	1.3
Hours played per week	15.4	23.7	13.6

**Table 2: The length of time that players had played games in each genre**

Time since players started to play	First Person Shooter Game (%)	Role Play Game (%)	Real-time Strategy Game (%)
1-2 months	5.1	7.6	11.8
3-4 months	7.7	0.8	10.5
5-8 months	2.6	5.9	9.2
9-12 months	5.1	6.7	13.2
1-2 years	20.5	22.7	31.6
3-4 years	35.3	28.6	9.2
5+ years	23.7	27.7	14.5

**Table 3: Social variables of friendships, attraction and dating, inclusion of friends and family within the game, disclosure within the game and comparability of friends**

Social variables	First Person Shooter Game	Role Play Game	Real Time Strategy Game
<i>Good Friends</i>			
Yes	88.4	89.7	55.7
No	11.6	10.3	44.3
<i>Number of good friends</i>	13.8	7.8	4.3
<i>Guild/ clan friends</i>			
Yes	59.6	52.6	24.6
No	40.4	47.4	75.4
<i>Number of acquaintances</i>	27.0	26.9	14.8
Attraction to other			

players			
Yes	22.8	38.6	19.4
No	77.2	61.4	80.6
<i>Dating in real life</i>			
Yes	8.7	16.1	4.2
No	91.3	83.9	95.8
<i>Inclusion of friends and family</i>			
Yes	89.5	89.4	93.2
No	10.5	10.6	6.8
<i>Discussion of sensitive issues</i>			
Yes	42.8	46.6	28.9
No	57.2	53.4	71.1
<i>Comparability of friends</i>			
Yes	41.0	58.7	42.9
No	59.0	41.3	57.1

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**Figure 1: The age of female and male players**

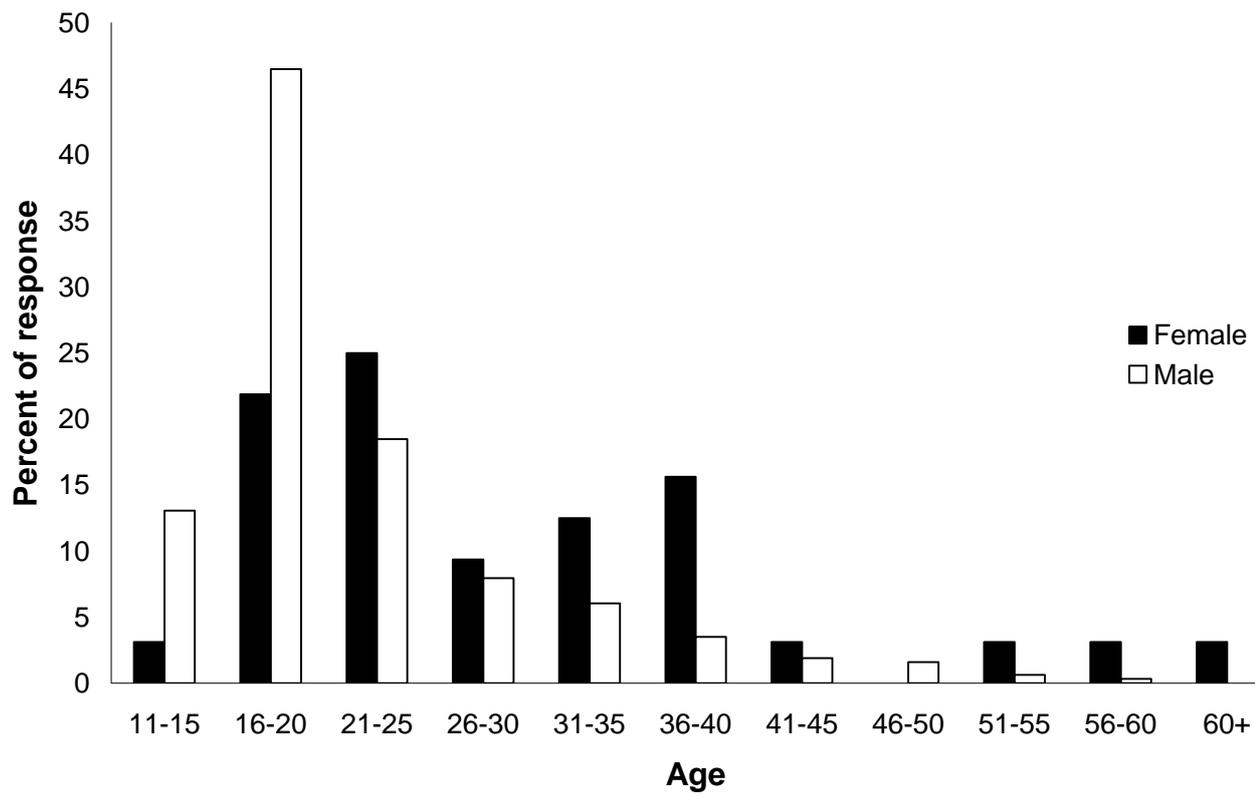
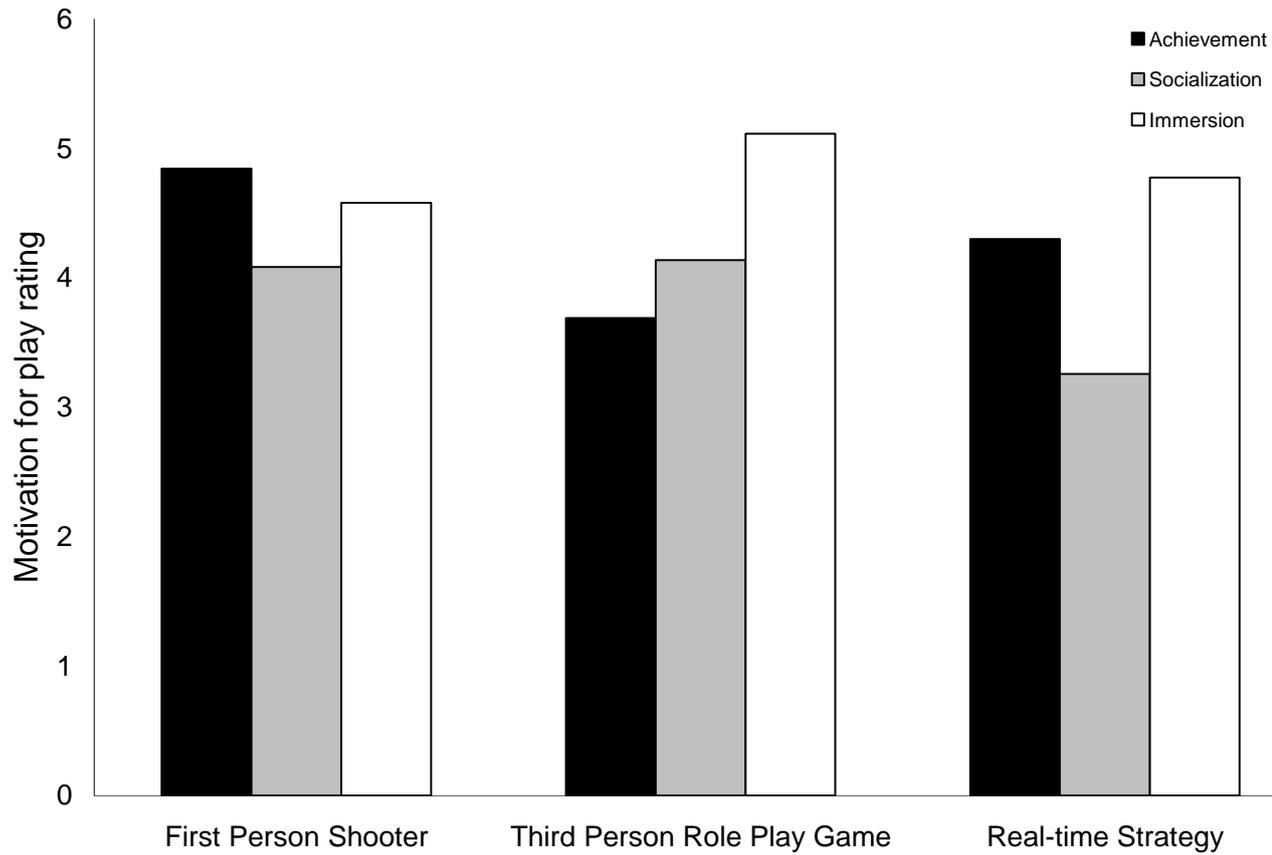


Figure 2: Ratings for being motivated to play for achievement, socialisation or immersion reasons



**Figure 3: The difference between males and female in motivation to play and achieve within the game**

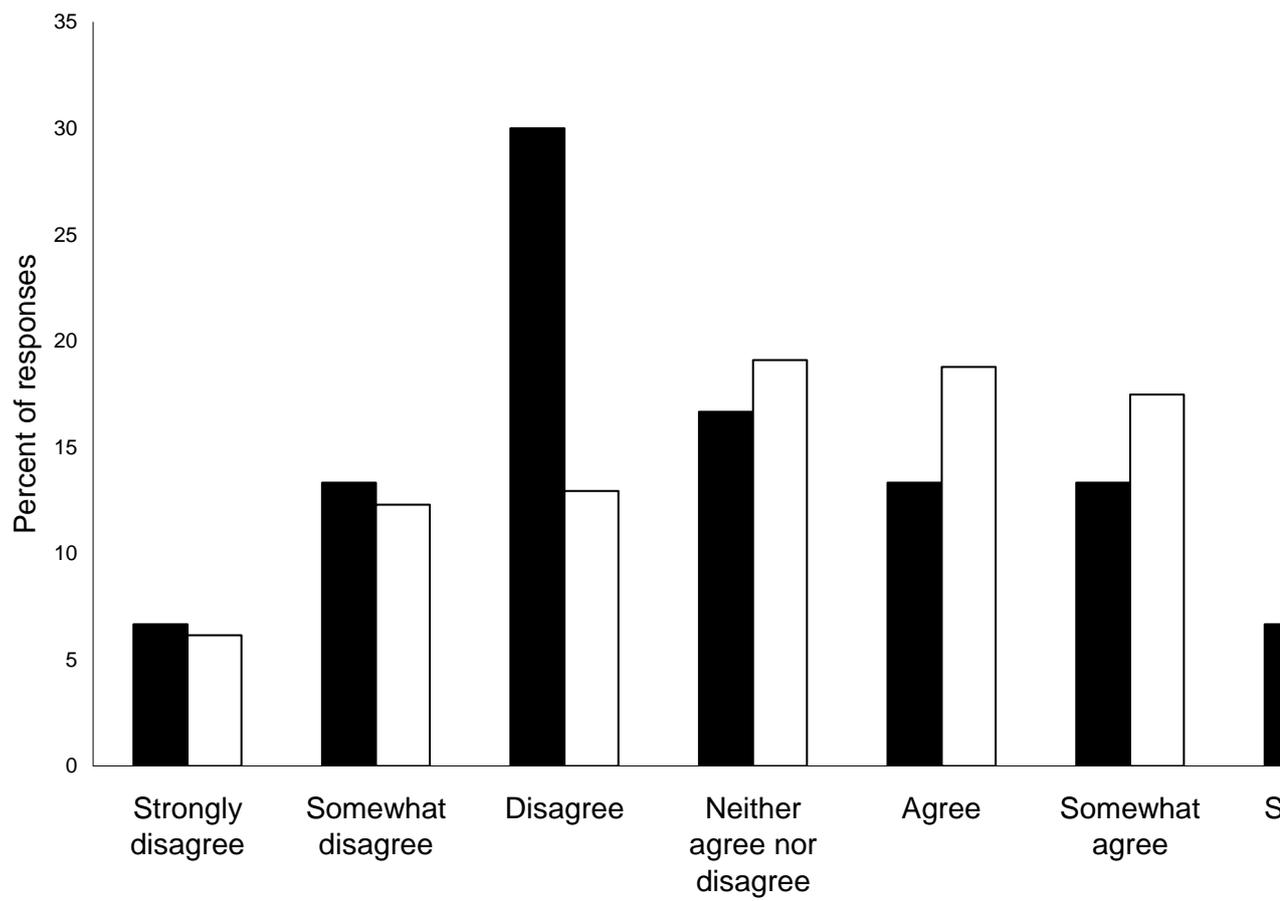
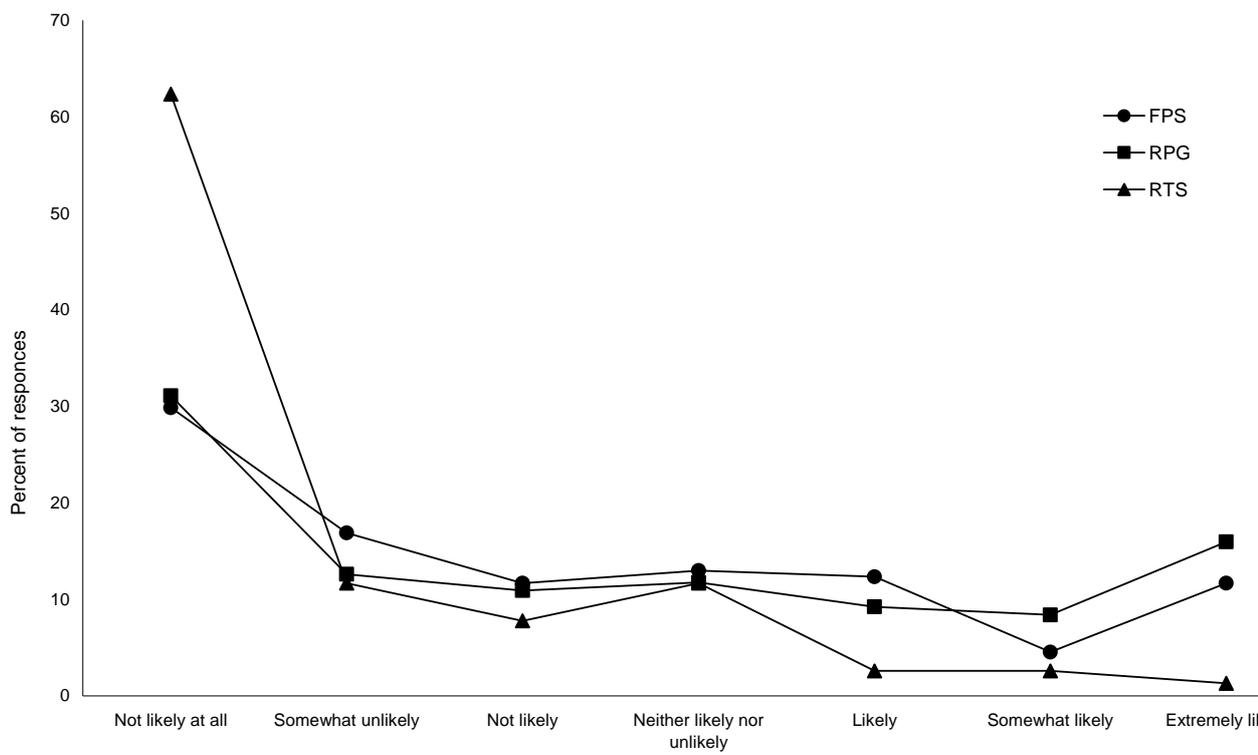


Figure 4: The likelihood that players in each game genre would meet up in real life



**Figure 5: The purpose players may have for meeting in real life**

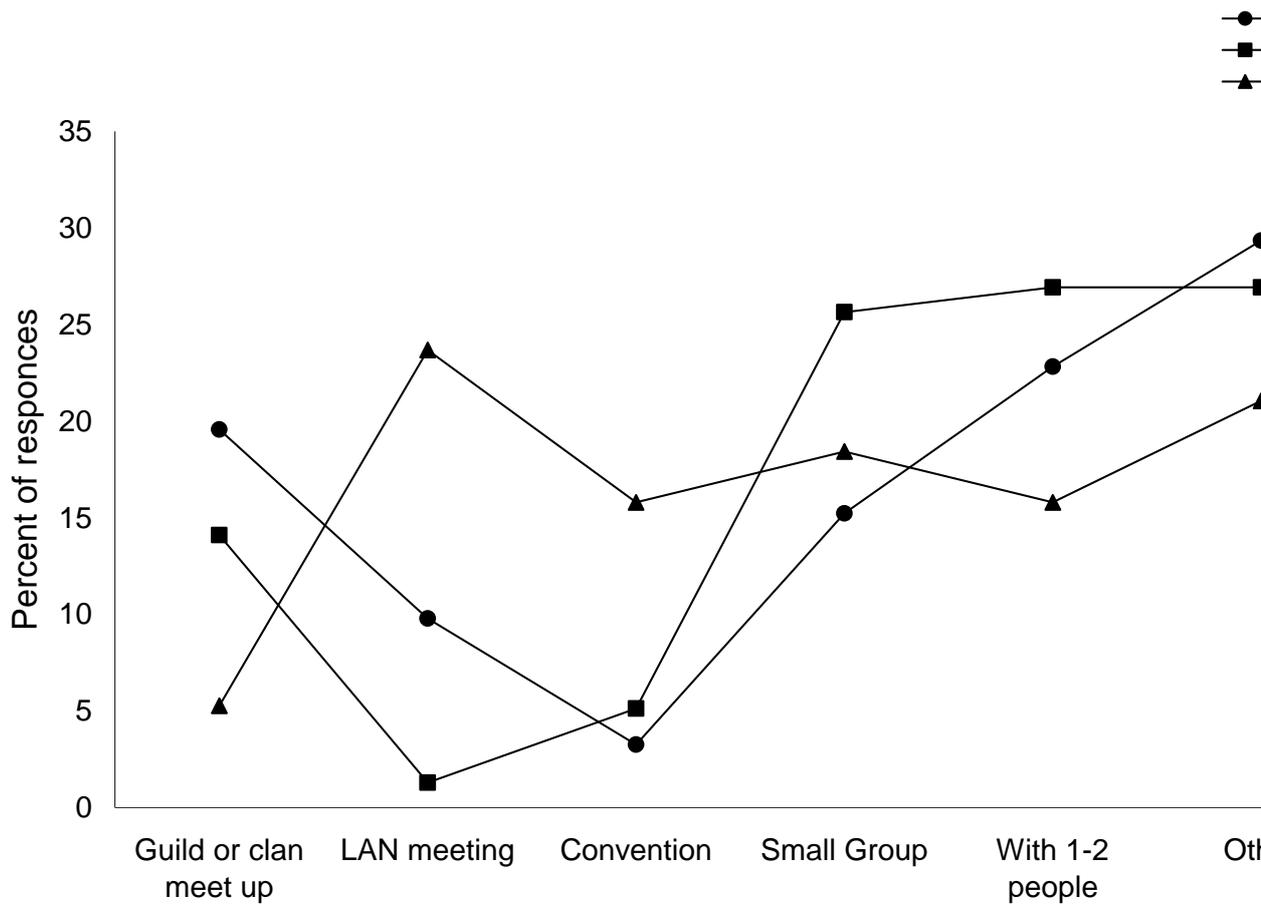


Figure 6: Whether the players of each genre played with friends, family, both or neither

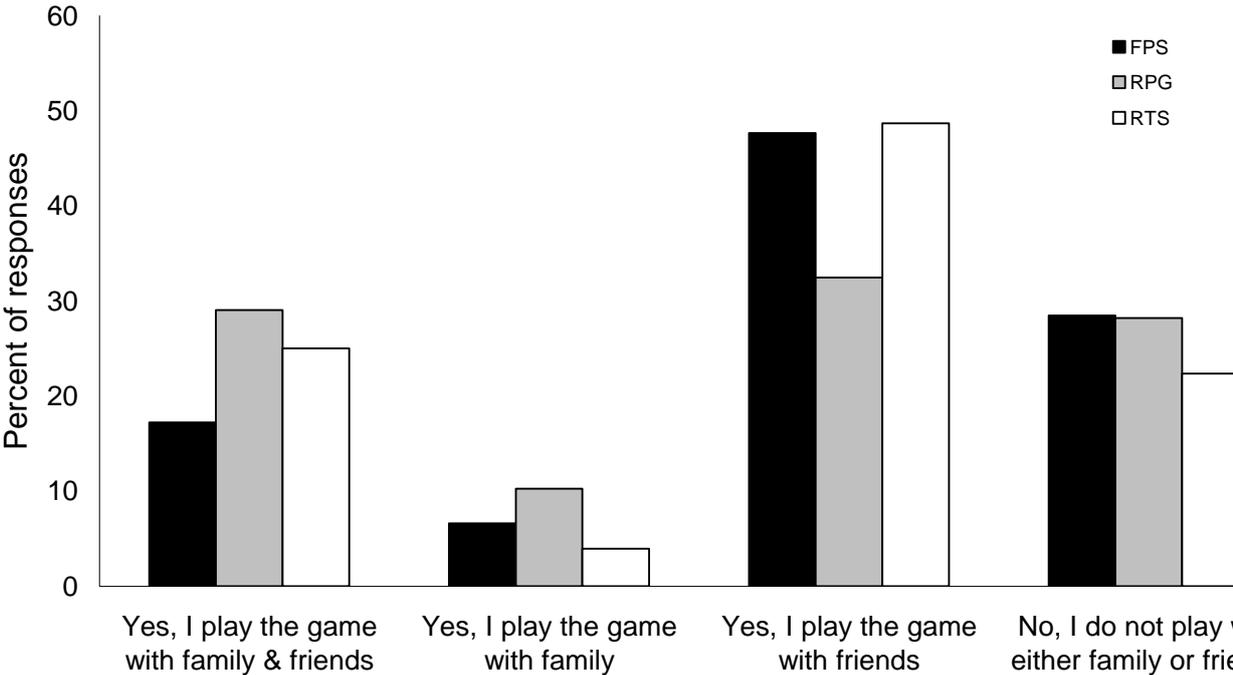
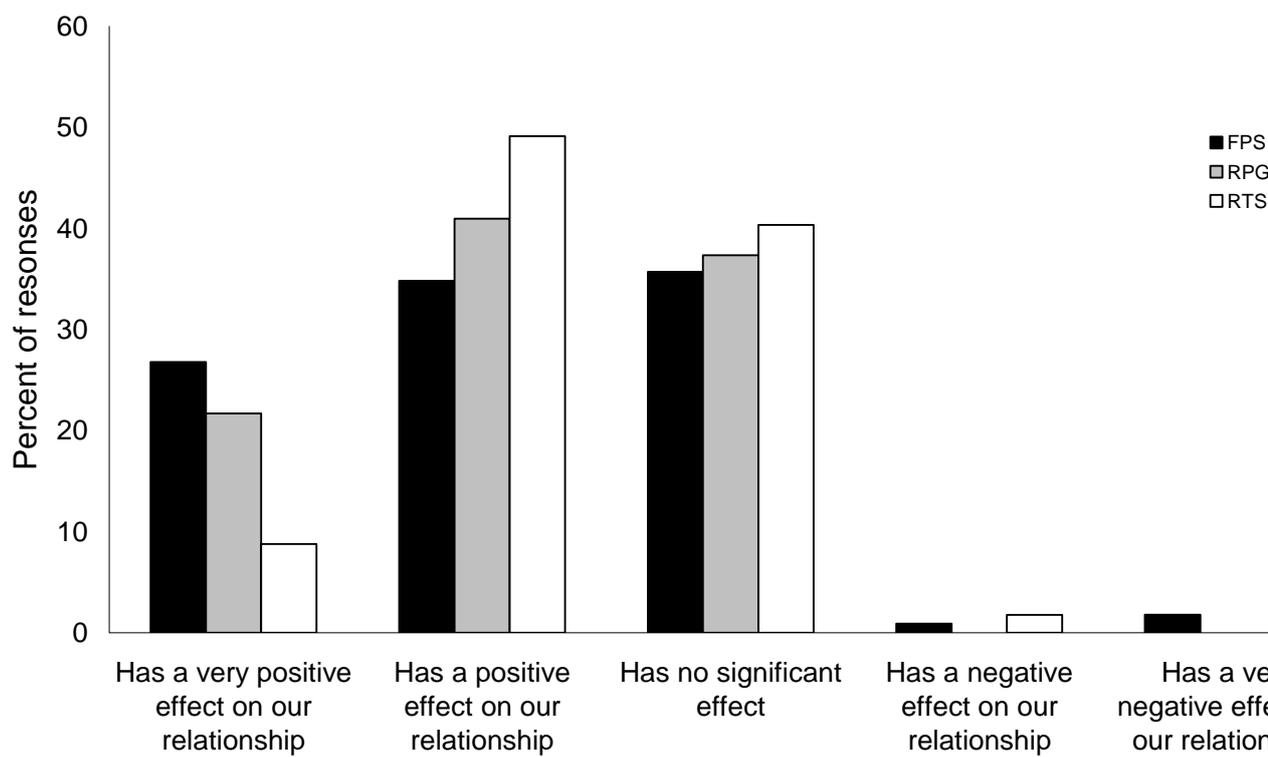
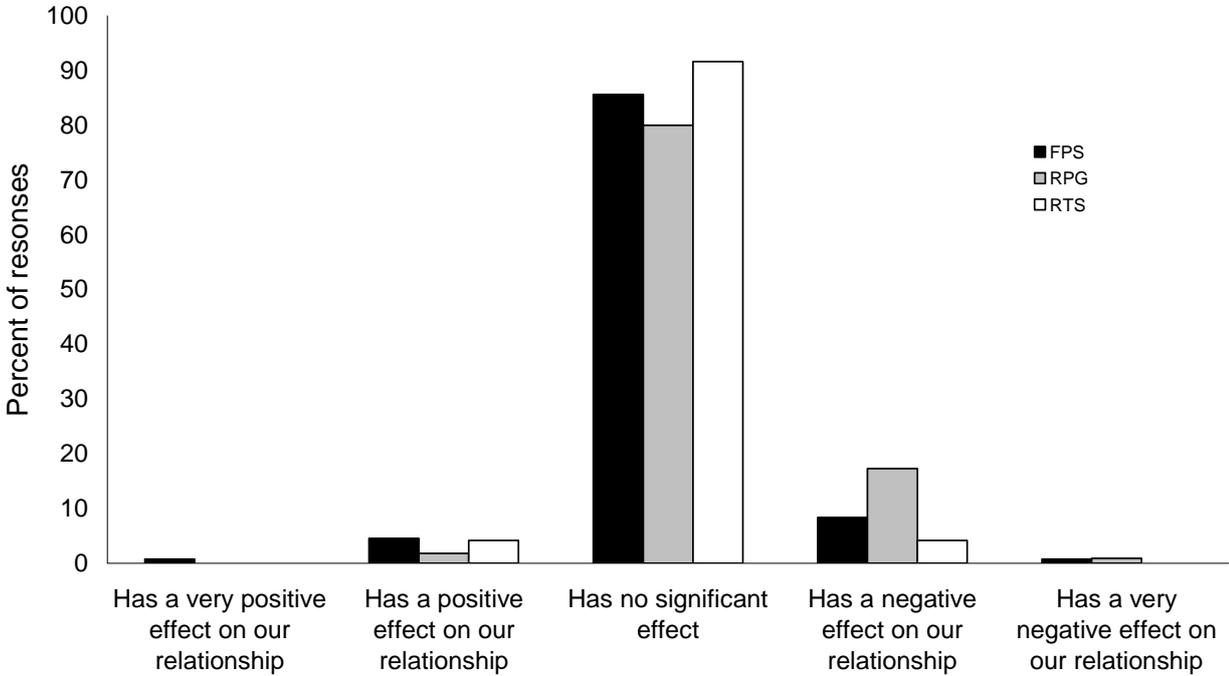


Figure 7: Whether the game had a positive or negative effect on the relationship of people who played the same game



**Figure 8: Whether the game has a positive or negative effect on the relationship of people who do not play the same game**



**Figure 9: Whether friends in real life or friends within the game were more trustworthy**

