Journal of Peace, Development and Communication

PEACE AND DEVELOPMENT

Article:	**Gender Differences in Video Game Play: Practices of Teenaged Players from Pakistan**
Author(s):	Aniqa Ali Ph.D. Scholar, Institute of Communication studies, University of The Punjab, Lahore
	Dr. Noshina Saleem Professor, Institute of Communication studies, University of The Punjab, Lahore
Published:	30th September 2020
Publisher Information:	Journal of Peace, Development and Communication (JPDC)
To Cite this Article:	Ali, Aniqa, & Noshina Saleem. (2020). "Gender Differences in Video Game Play: Practices of Teenaged Players from Pakistan." *Journal of Peace, Development and Communication*, vol. 04, no. 02, 2020, pp. 270–294, https://doi.org/10.36968/JPDC-V04-I02-15.
Author(s) Note:	Aniqa Ali is a Ph.D. Scholar at Institute of Communication Studies, University of The Punjab, Lahore. Also serving as Lecturer in Department of Media & Communication Studies in International Islamic University, Islamabad Correspondence e-mail: aniqa.naseer@iiu.edu.pk
	Dr. Noshina Saleem is serving as Director and Professor at Institute of Communication Studies, University of The Punjab, Lahore

Abstract

The present research study aimed to examining gender differences in gaming patterns and preferences of teenage gamers in Pakistan. The gaming patterns involve frequency of game play and time spent on game play. The video game preferences were measured by exploring game genres and style(mode) in which game players mostly play. The study was quantitative and survey is conducted by using purposive research method as only game player were selected as sample from schools of Islamabad, Pakistan. The close ended questionnaire adapted from 'Media Self Report Questionnaire' used by Elliot (2006), Bajovic (2012) and Hodge (2019) was filled by 576 respondents. The study found that teenage girls and boys significantly differ in terms of frequency of game play and time spent on video gaming. It was found that boys mostly play in multiplayer mode and prefer to play action, role playing game and sports game genres. On the other hand girls' prefer single player mode and adventure, action and horror game genres. The present research can be used as baseline exploratory study for future studies in the domain of video gaming.

Key words: Gender Difference, Video games play, Teenager players

Introduction

Video gaming has become one of the most popular activities for children, teenagers and adults to entertain themselves. The video game and its related products as a business has become a major revenue generating industry .Though its consumers are increasing day by day but substantial gender differences are observed in usage pattern in video game play (Vorderer et al. 2006; Poole, 2000). Many studies suggested that females are less interested in video games, their knowledge on games is limited and their motivation to play video games differ from male gamers (Lucas & Sherry, 2004; Wright, et al., 2001; Brown et al.1997; Cassell & Jenkins, 1998; Cassell , 2002). However Hartmann and Klimmt (2006) argued that new studies are suggesting that now more and more females are involving themselves in video game play with increased screen time.

According to current report on data of video game users in USA (ESA, 2019), 46% are female video game players and 54% are male gamers. The researches implied that though video gaming is traditionally considered as male dominated territory but due to the materialization of female subgroups adopting both male centric games and the new female centric games to involve female players, the gap in game play in male and female players has started to narrow, in USA as well as some other global markets (Bryce & Rutter, 2002 ; Cassell, 2002; Eklund, 2016; Veltri et al, 2014). Mostly studies are conducted with sample from western cultures and very limited data is available on playing practices of gamers in Pakistan.

There are some studies conducted which found that teenagers in Pakistan are as addicted to video gaming as in other parts of globe but these studies have not discussed gender comparison while measuring addiction of video games in adolescents in Pakistan.(Khan & Muqtadir ,2012; Zahra et al , 2019). Khan and Muqtadir(2012) discussed that majority of adolescents are involved in excessive video gaming and male are more inclined towards

problematic online gaming than females. Zahra et al.(2019) also found that majority of video gamers show symptoms of online gaming disorder due to excessive game play. Both of these studies have discussed video game play in context of adult gamers and present research has explored video game play patterns and gender differences in young teenage gamers to contribute new insight and data in limited research done in Pakistani context. Many researchers argue that teenagers are most vulnerable group which can be influenced by video games therefore more research is needed to study them. Moreover the present research will help to add new insight and data on gender differences in context of Pakistan as argued by research studies that gender is the main predictor in determining video game effects due to significant difference in play patterns. (Anderson & Bushman, 2001; Bajovic , 2013 ; Hodge , 2019 ; Gentile , 2011).

Objective of Research Study

The objective of this research paper is to explore gender differences among teenage girls and boys video gamers' in Pakistan regarding their playing practices and preferences so that new data regarding gender gap between video gaming can be explored with respect to Asian countries.

Literature Review

Many research studies (Bajovic, 2013; Copeland 2004; Scharrer, 2004; Anderson & Bushman, 2001; Anderson & Dill, 2000; Lucas & Sherry, 2004; Woodard & Gridina, 2000) were conducted to measure differences in playing patterns and motivations of game play across gender play and reported that females take less interest, have limited game related knowledge, play less frequently and spent less time on video game play as compared to males. Rideout et al(2010) that most popular activity among girls is to hang out with friends and only 6% girls reported playing video games but majority of boys prefer to play video games as compared to spending time with

friends. Taylor (2006) argued that partial reason for existence of differences in video game play patterns in both genders might be the access and game design. Researchers report that video games are designed according to interests of male audience and female characters are weak , passive and highly sexualized; therefore female audience turn away from serious gaming.(Smith et al., 2003; Haninger & Thompson, 2004). Researcher argue that in traditional sense video gaming is considered as male domain as substantial differences exist among gender in adoption, frequency , time spent , gaming style and preference of game content (Lucas & Sherry, 2004; Chou and Tsai , 2007; Chen2010; Guadagno et al. , 2011; Veltri et al., 2014). Hainey et al (2011) reported that men play more online and computer games and start taking interest in serious gaming early in their lives as compared to females who start playing games later in their life. In a research by Chou and Tsai (2007) the result indicated that males squander more time playing (284 min/week) as compared to females who spent less time (172 min /week). It was found that males play regularly for longer duration of time than female game players. The research study concluded that males spent more than 9 hours in week on game play and female gamers spent around 4.39 hours in a week. On the other hand Kuo et al (2012) conducted research on 3000 players from age 8 to 86 suggested that women are spending more time gaming. The results indicated that adult males spend less time playing games (173.96 min/day) as compared to adult female players (223.70 min/day) .Williams et al. (2008) also found that males spend 25 hours in a week as compared to females who spend 29 hours in week. Gentile (2011) conducted research on pathological video game use among adolescents from age 8 to 18 years old and found that on average adolescents play video games three to four times in a week but this frequency is higher in males as compared to females. Female on average are playing once or twice in a week. The survey research further found that that there is also a significant

difference in amount of time spent by male and female gamers on video gaming as boys are playing for almost 16 hours per week and girls were playing games for 9 hours on average in a week. Similar findings were found by Bajovic (2013) and Hodge (2019) that sizeable gender differences are present in terms of frequency, time and years of game play across gender. The research studies conducted in context of Pakistan to measure excessive problematic game play across youth also found that as compare to females males are more prone to problematic gaming and internet gaming disorder because they play frequently and for longer duration (Khan & Muqtadir, 2012 ; Zahra et al. , 2019). On the basis of findings in literature on video game usage patterns across gender the present research study suggested following hypothesis:

H1: Male teenage gamers play video games frequently as compared to female game players.

H2: Teenage male gamers spent more time on video game play than teenage female game players.

Further many studies found that gender differences not only exist in terms of playing patterns but male and female gamers differ in terms of their gaming styles and game genre preferences as well. Many research studies while discussing differences in preferences of genre found that major indicator is the style of game play i.e. mode which is used by game player. Wohn and Ratan(2020) discussed that due to rise of casual games industry statistics suggest that there is substantial increase in female gamers but in case of serious core games substantial differences exist in gaming styles. The researcher while conducting study on gender differences in multiplayer games found that male game players are more involved in massive multiplayer gaming than females and therefore prefer those genres which support multiplayer mode. The research study by Williams, Yee, and Caplan (2008) also found by examining online player data of 'Everquest' game that more than 80% online gamers who were playing the game in

multiplayer mode were males. Further many new research studies also supported these findings that females prefer single player mode more as compare to playing video games in multiplayer mode (Dorgan , 2018; Hainey, Connolly and Boyle, 2011; Bonnano & Kommers, 2005). Zahra et al. (2019) also found that multiplayer games are more played by males in Pakistan. On the basis of this the present research has constructed the following hypothesis:

H3: There is significant difference in preferred mode of game play across teenage male and female gamers.

Game players preferences in content (games & genres) was another dimension studied by researchers (Bajovic 2013; Dickey , 2006; Eklund, 2016; Hodge, 2019; Iqbal et al. , 2010; Lopez –Fernandz et al., 2019) and it was reported that male prefer core genres (like MMO games, first person shooter games , action games ,role-playing games, racing games etc.) as compared to females who prefer noncore genres(adventure , simulation, dance, rhythms and casual genres etc.).Quaiser-Pohl et al. (2005) found that 'action' and 'simulation' games were liked by males (81.7%) and logic and skill based games were liked by female game players. Bonanno and Kommers (2005) explored 'Maltese' population and found females preferred to play 'puzzle, adventure, fighting and managerial' game genres. On the hand males preferred 'first-person shooter, role–playing, sports and strategy' based games genres. It further argue that female prefer genres which do not take much time, dedication and focus. Olsen et al. (2008) explored video game preferences and found that boys prefer action and violent games because they use it as a mean to express their fantasy about power and seek improved skill in action which they think is exciting in real life as well. Their study also found that significant number of girls players also use action video games to vent out their anger and other emotional reactions. In another study by Royse et al. (2007) explored connection between video game play and skills in

technology use and found that females savvy in technology play variety of male dominated genres which allow them to challenge traditional gender norms.

Winn and Heeter (2009) in his study asked participants to design a game and result indicated females have designed gender neutral games with little or no violence but males preferred violent content in their design. Subrahmanyam et al. (2000) also argue that girls acknowledge that they don't prefer aggression in games and prefer teamwork rather than competition. Researchers argued that argued that dominant male roles which are all muscular armed with weapons with aggressive stance and dominantly violent, militaristic action based on conquest in video games; dissuade female players from hard core gaming but they were main attraction for boys as they consider it as part of their normal adolescent development (Cohen, 2009; Jansz et al., 2010). But there are studies which discussed that many games like *Grand Theft Auto' , 'COD'* -which are mature games due to its content full of blood, extreme violence, explicit language and sexual content was not only the most favorite game of boys but after Sims it is the second most popular game among girls as well (Olsen et al., 2007; Carr , 2005; Hodge , 2019) Moreover the research studies also found that females game players prefer to play variety of game genres and many hardcore female gamers also prefer to play action oriented genres like males to challenge societal norms(Bryce & Rutter , 2002; Hartmaan & Klimmt,2006). This contrasting results in research indicated that there exists a research gap as from last decade female gamers have increased and their gender preferences also changed so new studies are required to explore that preference of video game content by female gamers. Based on literature the research study has suggested following research question:

RQ1: Is there any difference in preference of game genres in male and female teenage game players?

Research Methodology

The quantitative Survey method is used and questionnaire is used as a tool to collect data from both male and female teenagers of age 13 to 18 in schools of Islamabad, Pakistan. The questionnaire is adapted from the 'Media Self Report Questionnaire' used by Elliot (2006) which was used by Bajovic (2013) and Hodge(2019) to study video game play of adolescents. The questionnaire includes gender, age and school of respondents. The age groups are categorized into early teenagers who are from 13 to 15 years old and late teenagers were from 16 to 18 year old. The questionnaire included close ended questions measuring frequency and time spent on video game play in a week. Then the frequency of playing mode (single and multi player) on three- point likert scale is also measured. As single player gamers play alone and in multiplayer mode you play with other gamers as a team or as an opponent. To measure game preferences a list of game genres from literature (Bajovic , 2013; Hodge (2019) was given and respondents have selected their preferred genres.

Islamabad is selected as it is capital of Pakistan and e people from all provinces of Pakistan are settled for job purposes. Prior to data collection pilot testing is conducted on 30 teenagers for determining the clarity of questionnaire. The reliability of tool as indicated by cronbach alpha is 0.642. For final data collection researcher has visited schools and get questionnaires filled in respective classes under the supervision of school administration. The purposive sampling method applied for respondents and only those respondents are selected who play video games on, I –Pad, PC or any console (Play station or Xbox). 800 questionnaires were distributed but only 576 respondents have filled and returned their questionnaire.

Findings & Analysis

There are 576 total respondents and 388 were males and 188 were females. Out of 576 respondents there were 314(55%) teenagers who belong from early teenage group (13-15) and 262 (45%) were from late teenage (16-18) group (see Table 1).

Table 1: Demographic Profile of Gamers

Demographic Profile	Frequency	Percentage %
Gender		
Boys	388	67
Girls	188	33
Age Groups		
Early teens	314	55
Late Teen	262	45
Total	576	100

Frequency of Game Play

H1: Male teenage gamers play video games frequently as compared to female game players.

To measure this hypothesis respondent were asked that how frequent they play video games and independent sample T test is conducted to measure differences across gender. Out of 209 once a day players ; 185/388 (48%) were boys and 24/188(13%) were girls. The respondents (272) who play 3 or 4 times/ week; 108/388(28%) were boys and 46/188(24%) were girls. Out of 144 respondents who play once or twice a week; 71/388(18%) were boys and 73/188(39%) were girls. Out of 52 respondents who play 3 or 4 times/ month; 19/388(5%) were boys and

33/188(18%) were girls. Out of 17 respondents who play once or twice a month; 5/388(1%) were

boys and 12/188(6%) were girls. (See Table 2)

Table2: Frequency of Video Game Play across Gender

Frequency of Game Play	Gender Of Gamers				Total
	Boys		Girls		
	n	%	n	%	
Once a day	185	48	24	13	209
3or 4 times /week	108	28	46	24	154
1 or 2 times /week	71	18	73	39	144
3 or 4 times / month	19	5	33	18	52
1 or 2 times /month	5	1	12	6	17
Total	388	100	188	100	576

An Independent sample T test has revealed significant difference in boys (M=4.16,

SD=0.974) and girls (M=3.2, SD=1.07); t(574)=10.72 and p=.000. The result in Table 3

indicated that mean score of boys is higher than female gamers which prove the hypothesis that

male teenage gamers play video games frequently than female teenage game players. The results

revealed that majority of girls play once or twice/week and majority of boys play every day.

Table 3: Gaming Frequency across Gender (T-Test)

Gender	Frequency of Game Play (Min =1 & Max=5)			*T-Test*			
	N	*M*	*SD*	*M diff*	*t*	*df*	*P*
Boys	388	4.16	.974	0.96	10.72	574	.000
Girls	188	3.2	1.07				

Time Spent on Game Play

H2: Teenage male gamers spent more time on video game play than teenage female game players.

Respondents were asked that how much time they spent in hours on video game play in a week. Out of 141 respondents who play for more than 12 hours; 130/388 (33%) were boys and 11/188(6%) were females. The respondents(214) who play for 9-12 hours; 162/388(42%) were boys and 52/188(28%) were girls. Out of 169 respondents who play for 5-8 hours; 74/388(19%) were boys and 95/188(50%) were girls. Out of 90 respondents who play for 1-4 hours; 22/388(6%) were boys and 30/188(16%) were girls. (See Table 4).

Table 4: Time Spent on Video Games Play

Time Spent on Video Game Play	Gender Of Gamers				Total
	Boys		Girls		
	n	%	n	%	
1-4 hours	22	6	30	16	52
5-8 hours	74	19	95	50	169
9-12hours	162	42	52	28	214
More than 12 hrs	130	33	11	6	141
	388	100	188	100	576

An Independent sample T-test revealed that boys (M=3.03, SD=.868) have higher mean score than girls (M=2.23, SD=0.718) with values on T-test as t(452.4)=2.360 and p= .019. The t test indicated that boy teenage gamers significantly differ from girls in terms of their time spent on video game play (See Table 5). The results revealed that majority of girls spent 5-8hrs / week and majority of boys spent 9-12 /week.

Table 5: Time Spent across Gender (T-Test)

Gender	Time spent on Game Play (Min =1 & Max=4)			*T-Test*			
	n	*M*	*SD*	*M diff*	*t*	*df*	*P*
Boys	388	3.03	.868				
				0.8	10.64	574	.000
Girls	188	2.23	.718				

Gaming Style (Game Mode) of Teenagers

H3: There is significant difference in preferred mode of game play across teenage male and female gamers.

Out of 388 boys 47 have responded that they never play in single player mode, 220 have rarely used, 106 sometimes play and 15 reported to use single player mode regularly. In 188 group of girls , 18 girls had never used single player mode, 30 reported that they rarely use it, 96 reported that they sometimes use and 44 reported that they regularly play in single player mode. On the in multiplayer mode out of 388 boys, 193 reported regular use , 137 reported that they sometimes play, 45 rarely use and 13 boys reported that they never play in multiplayer mode. In sample of 188 girls, 21 reported regular use, 44 reported that they sometimes use , 43 reported that they rarely and 80 reported that they never use multiplayer mode.(See Table 6).

Table 6: Comparison of Game Play Mode and Gender

Game Play Mode	Frequency of using mode				Total
	Never	Rarely	Sometimes	Regularly	
Single player Mode					
Male	47	220	106	15	388
Female	18	30	96	44	188
Multiplayer Mode					
Male	13	45	137	193	388
Female	80	43	44	21	188

An Independent sample T-test revealed that boys (M=2.23, SD=.705) have lower mean score than girls (M=3.13, SD=0.658) with values on T-test as t(574)=14.6 and p= .000 which indicates significant difference in usage of single player mode across gender. On other hand an independent sample T test [t(574)=16.1, p=.000] on multiplayer mode revealed significant difference across gender with mean score of boys(M=3.31 , SD=.806) higher than girls(M=2.03, SD=1.1). The results indicated that multiplayer mode is more used by male players and single player mode is more used by female players. (See Table 7)

Table 7: An Independent Sample T-test of Game Modes across Gender

Game Play Modes	Male (n=388)		Female (n=188)		T-Test			
	M	SD	M	SD	M diff	t	df	p
Single Player Mode	2.23	.705	3.13	.658	.898	14.6	574	.000
Multiplayer Mode	3.31	.806	2.03	1.1	1.28	16.1	574	.000

Video Game Genres

RQ1: Is there any difference in preference of game genres in male and female teenage game players?

A list of genre was given to respondents to explore their preferences and chi square test to compare difference in gender revealed mixed results. Action games were preferred by 221/388 boys and 56/188 girls. Role Playing games were preferred by 72 /388 boys and 106/188. Sports games were preferred by 181/388 boys and 25/188 girls. Adventure games were preferred by 132/388 boys and 71/188 girls. Strategy/Puzzle games were preferred by 94/388 boys and 83/188 girls. Horror games were preferred by 80/388 boys and 35/188 girls. Real Life Simulations were preferred by 77/388 boys and 39/188 girls. Dance/Rhythm were preferred by 17/388 boys and 14/188 girls.

There is significant association between action [χ^2 (1, N=576)=8.338 , p=.004], sports [χ^2 (1, N=576) =4.041, p=.04], adventure [χ^2 (1, N=576) =25.879, p=.000], horror[χ^2 (1, N=576) =5.902, p=.015] genres and gender as indicated by chi square test. There is no significant association between role playing [χ^2 (1, N=576)=2.501 , p=.114], strategy/puzzle [χ^2 (1, N=576) =2.293, p=.130], simulation[χ^2 (1, N=576) =.064, p=.801], rhythm [χ^2 (1, N=576) =.2.337, p=.126]genres and gender. The result revealed that action, adventure, sports and strategy/puzzle games were more popular among boys. Among girls role playing, strategy/puzzle, adventure and action games were popular .Dance/Rhythm games were not much preferred by both groups.

Table 8: Gender and Preferred Game Genres

Video Game Genres	Boys (n=388)		Girls (n=188)		Chi square		
	Yes	No	Yes	No	χ^2	df	p value
Adventure	132	255	71	82	25.879	1	.000
Action	221	167	56	105	8.338	1	.004
Sports	181	207	25	117	4.061	1	.044
Horror	80	308	35	132	5.902	1	.015
Role –Playing Games	72	316	106	163	2.501	1	.114
Strategy/Puzzle games	94	294	83	153	2.293	1	.130
Real Life Simulations	77	311	39	149	.064	1	.801
Dance/Rhythm	17	371	14	174	2.337	1	.126

Discussion and Conclusion

The data in this research though limited to sample taken from federal capital of Pakistan but it suggests the trend that video gaming is becoming popular and there is an inclination of excessive gaming in both genders. Though gender differences exist in gaming patterns among teenage boys and girls but with technological and internet advancements it's not like that girls are not involved in video gaming as their major leisure activity. These trends in results were supported by research study conducted by Zahra et al.(2019) and Khan and Muqtadir (2012) that late teenagers and university students in Pakistan were excessive players and have tendency of developing gaming addiction.

The first hypothesis has measured that males are frequent players of video games than females. The independents sample T test revealed that boys are frequent players as compared to

teenage girls. The results revealed that majority of teenage boys play video games every day or 3 or 4 times in a week but majority of girls play once or twice a week. Previous studies also found that male gamers are frequent gamers as compared to female and start taking interest in video games early in their age. Hodge (2019) when studied game play of teenagers and university students found that in both groups gender is the main predictor in differences in video game play patterns and male gamers were frequently playing games as compared to female gamers. The same results were found by many past researchers that male gamers were frequent in their game play and hardcore serious gamers play almost daily than female players (Bajovic, 2013; Chen ,2010; Chou & Tsai , 2007;Gentile , 2011; Hainley et al, 2011, Lopez-Fernandez , 2019; Phan et al., 2012) . Most of the researchers who have studies usage of video games across gender reported that with frequency of play there are significant differences in time spent by male and female gamers on video game play. Keeping in line of these findings the present research has hypothesized that male are spending more time on   game play than females. The study found significant different in teenage boys and girls time spent on video game play. The results indicated that males are spending more hours on video games in a week than female gamers. Though study found that more and more teenage girls are also spending more time(average 9-12 hours) on video game play but still significant differences exist as teenage boys spend nine to more than twelve hours in a week. The findings are in accordance as discussed by many researchers (Hodge , 2019; Bajovic , 2013 ; Gentile , 2011; Hainley et al, 2011, Khan & Muqtadir, 2012; Lopez-Fernandez , 2019; Phan et al., 2012; Zahra et al., 2019) that there exist gender differences among male and female gamers in traditional sense as teenage boys have significantly different playing patterns in terms of time and frequency than teenage girls.

The third hypothesis in line with literature on gaming styles suggested that there are significant differences in gender and preferred mode of game play. The results revealed significant differences in usage of single player and multiplayer across gender. The study revealed that usage of single player mode is high in girls and usage of multiplayer game is higher in boys. This was also found by many other researcher that gaming style(modes) differ across gender and multiplayer gaming arena is populated by male gamers(Bajovic , 2013; Hainey, Connolly and Boyle, 2010; Dorgan, 2018; Lopez-Fernandez , 2019; Wohn , Ratan & Cherchiglia, 2020 ; Zahra et al. 2019)

This present research study has also measured preference of genre across gender and found that there are significant differences across gender in certain genres like action, adventure, sports and horror games. But there were no significant differences in role playing , simulation , puzzle and dance/rhythm game genres. The results indicated that though less than males but females were playing adventure games also which was found by many studies that modern adventure games were as popular among boys as in girls.(Hodge , 2019; Bajovic , 2013; Phan et al., 2012; Quaiser-Pohl et al.2005; Iqbal et al. 2010; Hassouneh and Brengman,2013; Bonanno and Kommers,2005). The study found that the most popular game genre preferred by teenage boys is action, sports, adventure and strategy based games as discussed by (Fox and Tang 2014; Bajovic, 2013). On the other hand the most popular genres among teenage girls are adventure, role playing and strategy/puzzle genres.(Bajovic, 2013; Bonanno and Kommers, 2005; Hainley et al. 2011). But this study also found that it is not like that teenage girls in Pakistan are also playing action games which is similar to results of studies by Bajovic (2013) and Hodge (2019) who found that violent game like 'GTA' is equally famous among female gamers. The reason for that can be there is lot of emphasis on technical skills in Pakistan across girls and boys after the

advancement in internet technology after 2001; so as they are becoming technological savvy and spending more time on video gaming.

Overall it can be concluded that gender differences do exist in teenage girls and boys in Pakistan as across globe other studies suggest but with technological advancement this gender gap is limiting especially in younger population as suggested by some new researches. The study found that now young teenage girls also adopting video gaming, though they differ in frequency and time spent on video games but they are taking keen interest in those genres as well which were considered as dominate played by male gamers. But this area required further exploration as very limited data available with respect to gaming patterns in Pakistan. Moreover the present research study due to time and resources limitation has focused on sample only from Federal Capital of country(Islamabad) therefore results are difficult to generalize on Pakistan but the research has provided baseline and fulfilled research gap of limited data available on gaming in Pakistan. Future research studies can be conducted on sample from major urban cities of Pakistan and by studying socioeconomic factor as well for studying gaming patterns and preferences of teenager gamers in Pakistan.

References

Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and pro social behavior: A meta-analytic review of the scientific literature. *Psychological Science*, 12, 353-359.

Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and life. *Journal of Personality and Social Psychology*, 78, 772-790.

Bajovic , M.(2013). Violent video gaming and moral reasoning in adolescents: Is there an association? *Educational Media International* 50(3), Doi: 10.1080/09523987.2013.836367

Bonanno, P., & Kommers, P. (2005). Gender Differences and Styles in the Use of Digital Games. *Educational Psychology*, 25(1), 13-41. doi:10.1080/0144341042000294877.

Brown, R. M., Hall, L. R., Holtzer, R., Brown, S. L., & Brown, N. L. (1997). Gender and videogame performance. *Sex Roles*, 36 (11–12), 793–812.

Bryce, J., & Rutter, J. (2002). Killing like a girl: Gendered gaming and girl gamers' visibility. In F. Ma¨yra¨ (Ed.), Computer Games and Digital Cultures—Conference Proceedings,243–255. Tampere, Finland: University of Tampere Press.

Cassell, J., & Jenkins, H. (Eds.). (1998a). From Barbie to Mortal Kombat: Gender and Computer Games. Cambridge, MA: MIT Press.

Cassell, J. (2002). Genderizing HCI. In J. Jacko & A. Sears (Eds.), The Handbook of Human-Computer Interaction ,pp. 402–411. Mahwah, NJ: Lawrence Erlbaum.

The Canadian Teachers' Federation. (2005*).* Kids' take on media. Retrieved from www.erinresearch.com in December 2019.

Chen, L. S. L. (2010). The impact of perceived risk, intangibility and consumer characteristics on online game playing, *Computers in Human Behavior,* 26(6), 1607–1613.

Chou, C. & Tsai, M. J. (2007). Gender differences in Taiwan high school students computer game playing*. Computers in Human Behavior,* 23(1), 812–824.

Carr, D.(2005). Context , gaming pleasures and gendered preferences. *Simulation and Gaming*, 36(4),464-482.

Cohen, A. M. (2009). Closing the Gender Gap in Online Gaming. *FUTURIST,* 43(6), 10.

Dorgon, T. (2018). Video game engagement: gender differences, preferred mode of play and problem solving [Bachelor's thesis]. https://esource.dbs.ie/handle/10788/3421

Dickey, M. (2006).Game design narrative for learning: Appropriating adventure game design narrative devices and techniques for the design of interactive learning environments. *Educational Technology Research and Development*, 54(3), 245-263. doi: 10.1007/s11423-006-8806-y

Eklund, L(2016). Who are the casual gamers? Gender tropes and tokenism in game culture. Social, Casual and Mobile Games: The changing gaming landscape. In Tama Leaver and Michele Willson. New York: Bloomsbury Academic,. 15–30. Bloomsbury Collections. Web. 13 Jun. 2020.

ESA. (2019). Essential facts about the computer and video game industry. Retrieved from https://www.theesa.com/wpcontent/uploads/2019/05/ESA_Essential_facts_2019_final.pdf in January 2020

Elliott, A. (2006). Children's stories as Cultural Mirrors. Longitudinal research project. St. Catharines, ON: Brock University, Faculty of Education.

Fox, J., & Tang, W. Y. (2014). Sexism in online video games: The role of conformity to masculine norms and social dominance orientation. *Computers in Human Behavior*, 33, 314–320. doi: 10.1016/j.chb.2013.07.01.

Guadagno, R. E., Muscanell, N. L., Okdie, B. M., Burk, N. M. and Ward, T.B. 2011. "Even in virtual environments women shop and men build: A social role perspective on Second Life," Computers in Human Behavior (27:1), pp. 304-308.

Hodge, S. E., Taylor, J., & McAlaney, J. (2019). It's double edged: The positive and negative relationships between the development of moral reasoning and video game play among adolescents. *Frontiers in Psychology*, *10*. doi:10.3389/fpsyg.2019.00028

Hartmann & Klimmt (2006) Gender and Computer Games: Exploring Females' Dislikes. *Journal of Computer-Mediated Communication* .11,910–931

Hainey, T., Connolly, T., Stansfield, M. & Boyle, E. (2011). The differences in motivations of online game players and offline game players: A combined analysis of three studies at higher education level*, Computers and Education* , 57(1), 2197–2211.

Hassouneh, D. & Brengman, M. (2014). A motivation-based typology of social virtual world users. *Computers in Human Behavior* , 33, 330–338.

Haninger, K., & Thompson, K. M. (2004). Content and ratings of teen-rated video games. *Journal of the American Medical Association, 2(91)*, 856-865.

Iqbal, A., Kankaanranta, M., & Neittaanmäki, P. (2010). Experiences and motivations of the young for participation in virtual worlds. *Procedia - Social and Behavioral Sciences,* 2(2), 3190–3197. doi: 10.1016/j.sbspro.2010.03.488

Jansz, J., Avis, C., & Vosmeer, M. (2010). Playing The Sims2: an exploration of gender differences in players' motivations and patterns of play. *New Media & Society*, 12(2), 235-251. doi:10.1177/1461444809342267.

Khan , A. & Muqtadir , R. (2012) Problematic Online Gaming in Pakistan. *International Journal of Science and Research (IJSR),* 3(6), 2522-2525.

Kuo, W.-C., Wang, S.-T. and Yang, J.-C. (2012). An empirical analysis of the playing time by different genders and ages in an MMORPG, in *IEEE Computer Society*, Takamatsu, 114-116.

Lucas, K., & Sherry, J. L. (2004). Sex differences in video game play: a communication-based explanation. *Communication Research* , 31(5),499–523.

Lopez-Fernandez, O., Williams, A. J., Griffiths, M. D., & Kuss, D. J. (2019). Female Gaming, Gaming Addiction, and the Role of Women Within Gaming Culture: A Narrative Literature Review. *Frontiers in psychiatry*, *10*, 454. https://doi.org/10.3389/fpsyt.2019.00454

Olson, C. K., Kutner, L. A., Warner, D. E., Almerigi, J., Baer, L., Nicholi, A. M., II, et al. (2007). Factors correlated with violent video game use by adolescent boys and girls. *Journal of Adolescent Health*, 41, 77-83

Phan, M.H., Jardina, J.R., Hoyle, S., & Chaparro, B.S. (2012). Examining the role of gender in video game usage, preference, and behavior. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (pp. 1496- 1500). Sage. https://doi.org/10.1177/1071181312561297

Poole, S. (2000). Trigger Happy: The Inner Life of Videogames. London: Fourth Estate.

Quaiser-Pohl, C., Geiser, C. & Lehmann, W. (2005).The relationship between computer-game preference, gender , and mental-rotation ability. *Personality and Individual Differences*, 40(3), 609-619.

Royse, P., Joon, L., Undrahbuyan, B., Hopson, M., & Consalvo, M. (2007). Women and games: technologies of the gendered self. *New Media & Society*, 9(4), 555-576. doi:10.1177/1461444807080322.

Scharrer, E. (2004).Virtual violence: Gender and aggression in video game advertisements. *Mass Communication and Society*, 7, 393-412.

Smith, S., Lachlan K., & Tamborini, R. (2003). Popular videogames: Quantifying the presentation of violence and its context. *Journal of Broadcasting and Electronic* Media, 47(1), 58-76.

Subrahmanyam, K., Kraut, R. E., Greenfield, P. M., & Gross E., F. (2000). The impact of home computer use on children's activities and development. *Children and Computer Technology, 10*(2), 123-145.

Taylor, T. L. (2006). Play between worlds: Exploring online game culture. Cambridge, MA: MIT Press.

Veltri, N.F.; Krasnova, H.; Baumann, A.; Kalayamthanam, N. (2014). Gender Differences in Online Gaming: A Literature Review. In Smart Sustainability: The Information Systems Opportunity; Curran: Red Hook, NY, USA, pp. 3884–3894.

Vorderer, P., Hartmann, T., & Klimmt, C. (2006). Explaining the enjoyment of playing video games: The role of competition. In D. Marinelli (Ed.) : Essays on the Future of Interactive Entertainment , 107–120. Pittsburgh, PA: Carnegie Mellon University Press.

Williams, D.,Yee, N. & Caplan, S.E. (2008). Who plays, how much, and why? Debunking the stereotypical gamer profile. *Journal of Computer-Mediated Communication,* 13(4), 993-1018.

Winn, J., & Heeter, C. (2009). Gaming, gender, and time: Who makes time to play? *Sex Roles: A Journal of Research, 61*(1-2), 1–13.

Woodward, E., & Gridina, N. (2000). Media in the home. The fifth annual survey of parents and children. Philadelphia, PA: The Annenberg Public Policy Center.

Wright, J. C., Huston, A. C., Vandewater, E. A., Bickham, D. S., Scantlin, R. M., Kotler, J. A., Caplovitz, A. G., & Lee, J. (2001). American children's use of electronic media in 1997: A national survey. *Applied Developmental Psychology*, 22(1), 31–47.

Williams, D., Yee, N., & Caplan, S.E. (2008). Who plays, how much, and why? Debunking the stereotypical gamer profile. *J. Computer-Mediated Communication, 13*, 993-1018.

Wohn D.Y., Ratan R., Cherchiglia L. (2020) Gender and Genre Differences in Multiplayer Gaming Motivations. In: Fang X. (eds) HCI in Games. HCII 2020. Lecture Notes in Computer Science, vol 12211. Springer, Cham. https://doi.org/10.1007/978-3-030-50164-8_16

Zahra, S; Ahsan, S;Kiani, S & Shahbaz,K.(2019). Internet Gaming Disorder: An Emerging Addiction among Pakistani University Students, *Nust Journal of Social Sciences and Humanities*,5(1), 87-104.