The impact of avatar attractiveness and customization on online gamers' flow and loyalty

Nadeem, Riba and Kazmi, Aliya and Jawaid, Rubab and Arif, Syed Mohsin

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The impact of avatar attractiveness and customization on online

gamers' flow and loyalty

The research report submitted

By

Aliya Kazmi (7350)

Riba Nadeem (6639)

Rubab Jawaid (6587)

Syed Mohsin Arif (6600)

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FACULTY OF BUSINESS ADMINISTRATION

_____

Advisor
Dr. Syed Ali Raza

_____

Director Academics
Dr. Syed Ali Raza

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ABSTRACT

This study aims to examine the factor the avatar attractiveness and customization influencing online gamer flow and loyalty. The data were collected from 501 students from Karachi, mainly the students of Iqra University through online questionnaire for analyzing the research. The model PLS-SEM partial least square was used. We use regression analysis to analyze the association between variables. This study finds that avatar customization fuels avatar identification, which is to turn creates flow and loyalty in online game. This study also apply social identity and flow theories to explain how avatar attractiveness and customization contribute to online gamers flow and loyalty. The limitation of the study is we have conducted this research in Iqra University, second limitation is we have conducted research on 500 people. As it was online survey so most of the people take it for granted so result could be fluctuated. Furthermore, researchers should extend this study and can add more market generated content according to respondent's desires into research model to engage more and more online gamers.

Keywords: *Avatar Attractiveness, Online Gamers, Self-Identity, Loyalty, Higher Education, PLS-SEM.*

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Online games are popular electronic commerce platforms in which gamers use avatars to interact with others. Avatar identification (the extent to which gamers regard avatars as an extension of themselves) is known to be related to online gamer loyalty (Teng, 2019). Avatars are known to be influential in gaming communication. However, little is known about how avatar attractiveness and customization impact online gamers' flow, i.e., the experience of total concentration with intrinsic enjoyment and loyalty (Liao et al., 2019). Three models are compared using structural equation modelling: a partial mediator model, in which customization increases gamer loyalty directly and indirectly via enhanced immersion satisfaction; a full mediator model, in which immersion satisfaction fully mediates how customization influences loyalty; and an independent variable model, in which customization and immersion satisfaction are independent variables impacting gamer loyalty (Teng 2010). Online games are known for fulfilling computer users' various needs. However, little is known about whether real-world need satisfaction (not gaming satisfaction) motivates users to play online games. Grounded in self-affirmation theory (SAT), we develop a framework and formulate hypotheses to explain how aspects of real-world need satisfaction affect online gamer loyalty (Liao et al., 2019).

Advertising within videogames has grown in importance over the last few years. This research investigates the impact of character presence in avatar games on brand attitude and game performance, and how such effects depend on national culture. A total of 130 students participated in an experiment conducted in the US and Korea. Results show that when the featured brand in an advergames was a publicly consumed product, character's presence (vs. absence) had a positive effect on attitude toward the brand and gaming performance, but when the featured brand was a privately consumed product, character's presence had a negative effect on these variables (Choi et

al., 2015). Online multiplayer games create new social platforms, with their own etiquette, social rules of conduct and ways of expression. What counts as aggressive and abusing behaviour may change depending on the platform, but most online gaming companies need to deal with aggressive and abusive players explicitly. This usually is tied to a reporting mechanism where the offended player reports an offense (Balci and Salah 2015).

According to Teng Online games have created significant opportunities for electronic commerce managers. The degree to which online gamers regard their avatars—their gaming representations— as themselves is known to be influential to gamers' behaviour but little is known about how such identification impacts online gamer loyalty (i.e., gamers' continued intention to play). However, there is scant research on how avatars' characteristics impact gamers' friendly behaviour via avatars, i.e., avatar friendliness, and how avatar friendliness is related to online gamer loyalty. However, there is limited research on how avatars' characteristics impact gamers' friendly behavior via avatars, i.e., avatar friendliness, and how avatar friendliness is related to online gamer loyalty. (Li, Nguyen, Teng 2018)

Avatars are known to be influential in gaming communication. However, little is known about how avatar attractiveness and customization impact online gamers' flow, i.e., the experience of total concentration with intrinsic enjoyment and loyalty (Liao, Cheng, and Teng 2019). Although this method has revealed many interesting phenomena, it cannot determine the effect of behaviour independent of other traits. Research on the role of attractiveness in social development provides an example of this conundrum: Are attractive and unattractive children/adults treated differently because of their attractiveness (independent of their behaviour), do they behave differently and thus elicit differential treatment, or both? Virtual world and avatar-based technologies allow researchers to control the social behaviours of targets; however, whether children and adults use

the facial attractiveness of avatars as a social cue in the same way as they do with real peers is currently unknown. (Principe and langlois 2013).

1.2 PROBLEM STATEMENT

In previous studies it has investigated that the impact of avatar character presence in advergames on attitude and game performance and how it effects on national culture. It could be targeted on gamers. Online multiplayer games create new social platforms, with their own etiquette, social rules of conduct and ways of expression. Overall, this study contributes to the electronic commerce literature by demonstrating how avatar attractiveness and customization can impact online gamer loyalty. The findings of this study support the idea that customization is influential to users' responses, consistent with Cheung et al. (2015) what counts as aggressive and abusing behavior may change depending on the platform, but most online gaming companies need to deal with aggressive and abusive players explicitly. This usually is tied to a reporting mechanism where the offended player reports an offense (Balci and Salah 2015). Gamers' social interactions may build community trust and provide social value that directly influence gamers' loyalty (Hsiao and Chiou, 2012). A strong avatar identification predicts customer (or gamer) loyalty (Teng, 2017b; Wang et al., 2015)

This study filled this gap by developing its research framework from the perspective of the social identity theory and the social capital theory. This study is the first using the two theories, i.e., the social identity and social capital theoretical perspectives, to clarify the mechanism underlying the impact of avatar identification on online gamer loyalty, assisting electronic commerce managers to create a loyal user base. (Ching & teng 2017).

Software designers often attempt to increase the customizability of their products to facilitate human–computer interaction and improve user response. However, exactly how customizability affects online gaming is unclear. This study posits that customization enhances gamer immersion satisfaction and loyalty. (Teng 2010)

1.3 RESEARCH OBJECTIVE

The objective of this study is to analyze the impact of Avatar's attractiveness and customization on online gamer's flow and loyalty.

1.4 RESEARCH QUESTIONS:

What is the impact of Avatar's customization and attractiveness on gamer's flow and loyalty?

1.5 SIGNIFICANCE OF THE STUDY

Many players are engage in online gaming simultaneously. During the game, there are such communications which in result creates good and pleasant conversation among the players. This helps the players to make new friends while also strengthening good chemistry with their old ones. Online games are needed to be played with moderation to gain benefit. As we all know that all games do not provide cognitive benefits so it's really important to choose a right game. Avatars in online games attract players to start a game and to see what happens with that chosen avatar. Attractive colours are also used to attract the players. This all happens through customization. Gender differentiation and colour differentiation helps the player to recognize their chosen avatars. A study also shows that players are motivated to choose the avatars through appearance as what they themselves look like .9 Games not only provide benefit to the adults and teenagers but also to the school going kids . Many new educational schools promote video games as a new way of teaching. Video games helps the children to improve their mental skills by providing such games

that are created to enhance the creative skills of the students. Online games also improves attention and concentration of the players. The attention and concentration that a player put in a game helps him to gain a particular advantage in the game and also to reach the next level in the present game. Online games avatars play big roles for the ratings of the game. For example, superman games are loved to be played by people whereas games with negative characters such as batman are not likeable to play frequently.

1.6 LIMITITION

The limitation of the study is as we have conducted this research in IQRA UNIVERSITY so, questionnaire is being solved from students of IQRA UNIVERSITY. So, data could be different if we took students from different universities (Qazi et al., 2020). Second limitation is we have conducted research on 500 people so, if we took review from 1000 people so, result could be fluctuated. As it was online survey so most of the people take it for granted so result could be fluctuated.

1.7 ORGANIZATION OF THE STUDY

We have five chapters in our study. We discuss introduction of the study in the first chapter. In chapter 2, we discuss the literature review which consist of empirical study, theoretical framework and conceptual framework. In chapter 3, we discuss the methodology of the study which contain all the important details of the research from research purpose to ethical consideration. Chapter 4 shows the total information of data analysis and statistical representation of our exploration. Whereas chapter 5 depends upon the end suggestions of our research.

CHAPTER 2

LITERATURE REVIEW

2.1 THEORETICAL BACKGROUND

This study is based on Social Identity Theory proposed by Tajfel and Turner, 1986. The purpose of this study is to investigate the impact of how do avatar attractiveness and customization impact online gamer flow and loyalty as people are motivated to maintain their status in their society. Online games are popular internet and electronic application which grounded social identity and theories.

Users tend to hold positive social identities via using avatars, e.g., creating positive impressions. As online games are communities more than a game so, gamers tend to maintain and express their identities through their appearance of avatar. People now focus more on their social status rather in normal life or their social circle. Avatar identification helps them in maintaining their status and identity in their social circle. Moreover, students of present era are more conscious and they want social benefits in all activities (Raza et al., 2020).

Grounded in social identity and flow theories, the purpose of this paper is to construct a model to explain how avatar attractiveness and customization can impact online gamers' flow and loyalty. Moreover, avatar physical attractiveness and avatar ability to achieve are positively related to positive avatar image. Both unique and positive images of an avatar (as perceived by the user) are positively related to avatar identification, and further to online gamer loyalty.

2.2 EMPRICAL STUDIES

Liao, Huang, Pham, Cheng and Teng (2019) how do workplace frustration and need satisfaction motivate online gamer loyalty. Loyalty has been used as the dependent variable and workplace frustration, Autonomy need satisfaction, competence need satisfaction and relatedness need satisfaction are used as the independent variable. The data was collected through online survey

that it is a study on personality use of league of legends (LOL) is one the most popular online games.

Lee, Sun, Chen and Jhu (2015) the effect of avatar on trust and purchase intention of female online consumer: consumer knowledge as a moderator. The purchase intention is used as a dependent variable and cognitive trust, emotional trust are used as independent variable. We have collect data from 599 valid respondents our research target is online consumer behaviour.

Bailey, Wise and Bolls (2009) How Avatar Customizability Affects Children's Arousal and Subjective Presence During Junk Food–Sponsored Online Video Games. The purpose of this study was to determine how children cognitively and emotionally process interactive marketing of snack food products in advergames. The data was collected from children aged 10 to 12 were asked to play advergames with avatars that assigned to them. The result of this study indicate that customization of game avatar can affect both subjective feelings and emotion which may the gameplay will more enjoyable.

Li, Nguyen, Cheng and Teng (2018) how do avatar characteristics affect avatar friendliness and online gamer loyalty? Perspective of the theory of embodied cognition. Online gamer loyalty is used as dependent variable and attractiveness and friendliness are used as independent variable. The data was collected 1,384 responses from online gamers and use structural equation modelling for hypothesis testing.

Liao, Nguyen and Cheng (2019) how do avatar attractiveness and customization impact online gamers' flow and loyalty. The purpose of this paper is to construct a model to explain how avatar attractiveness and customization can impact online gamers' flow and loyalty. The data was collected 1,944 online gamers are collected. Structural equation modelling is used for analyses.

Liao, Pham, Cheng and Teng (2019) Impacts of real-world need on online gamer loyalty: Perspective of self-affirmation theory. The purpose of this study to explain how aspects of real-world need satisfaction affect online gamer loyalty. We collect 1965 valid responses using an online survey and apply structural equation modelling for hypothesis testing. The result inform online game providers that they could remind users of their real-world achievements and relations

Lee, Sun, Chen and Jhu (2015) the effect of avatar on trust and purchase intention of female online consumer: consumer knowledge as a moderator. The purchase intention is used as a dependent variable and cognitive trust, emotional trust are used as independent variable. We have collect data from 599 valid respondents our research target is online consumer behaviour.

Teng (2010) conducted a research and objective of the study is to enhance gamer's immersion satisfaction and loyalty by customization. Gamer's loyalty has been used as the as the dependent. Customization and immersion satisfaction are used as the independent variables. The data was collected from data from 865 online gamers and they provided valid responses via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relationship. The result shows customization and immersion satisfaction has positive effects on gamer's loyalty. It has been suggested that research online games are not based on virtual reality. Virtual reality based games give more attractive experience to the users then online games.

Li, Nguyen, Cheng, Teng (2018) conducted a research and objective of the study is to determine the impact of characteristics of avatars on online gamer's loyalty. Gamer's loyalty has been used as the dependent variable and avatar's attractiveness and avatar's friendliness are used as the independent variable. The data was collected from data from 1,384 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to test hypothesis. The result shows avatar's friendliness and characteristics have positive effects on gamer's loyalty.

Teng (2019) conducted a research and aims of the study is to determine the factors that create identification and loyalty among online gamers. Gamer's loyalty has been used as the dependent variable and avatar's identification is used as the independent variable. The data was collected from data from 1,384 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relation. The findings of the study shows avatar's identification have positive effects on gamer's loyalty.

Tseng, Chang, Lee and Teng (2018) conducted a research and objective of study is to examine the impact of gender swapping on online gamer's loyalty. Gamer's loyalty has been used as the dependent variable and gender swapping and social networks are used as the independent variable. This was the first research to fine the impact of gender swapping on loyalty of gamers. The data was collected from data from 225 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyse this relation. The end shows gender swapping has positive significant role in maintaining social networks to improve loyalty of online gamers.

Teng, Tseng, Chen and Wu (2012) conducted a research and aim of study is to examine the impact of gamer's misbehaviour on online gamer's continuation of specific game. Gamer's continuation has been used as the dependent variable and gamer's misbehaviour including bullying, account theft, cheating, hoarding and profanity are used as the independent variable. The data was collected from data from 767 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relation. The end shows negative impact gamer's misbehaviour on gamer's continuation of that game.

Looy, Courtois, Vocht & Marez (2012) conducted a research and aim of study is to determine the impact of gamer's identification in online games. Gamer's identification has been used as the dependent variable and avatar's identification, game identification and group identification are

used as the independent variable. The data was collected from data from 544 world online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relation. The end shows positive impact of group, game and avatar's identification on gamer's identification.

Looy, Courtois, Vocht & Marez (2017) conducted a research and aim of study is to determine the impact of growth expectancy. Gamer's loyalty has been used as the dependent variable and expectancy of growth, perceived skills and perceived challenges are used as the independent variable. The data was collected from data from 2,025 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relation. The result shows significant positive impact of perceived skills, perceived challenges and growth expectancy on gamer's loyalty.

Klimmt, Hefner, Vorderer, Roth & Blake (2012) conducted a research and aim of study is to determine the relationship of identification with video games characters. Identification has been used as the dependent variable and video game characters are used as the independent variable. The data was collected from data from 109 online gamers via online survey. Implicit Association Test (IAT) technique have been used to analyze this relation. The end shows positive impact of video games characters on gamer's identification.

Teng (2017) conducted a research and objective of study is to determine the impact of relationship on online gamer's loyalty. Gamer's loyalty has been used as the dependent variable and length, breadth and depth of relationship among gamers are used as the independent variable. The data was collected from data from 5,144 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relation. The end shows positive impact of relationship among gamers on loyalty of online gamers.

Chen, De Lu & Lu (2018) conducted a research and aim of study is to analyze the impact of game experience and cognitive styles on gamers towards avatars customization. Avatar's customization has been used as the dependent variable and gamer's game experience and cognitive styles are used as the independent variable. The data was collected from data from 93 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relation. The result shows significant positive impact of gamer's experience and cognitive styles towards customization of avatars.

Dardis, Schmierbach, and Limperos (2013) conducted a research and objective of study is to analyze the impact of customization and control of game on recall of brand. Brand recall has been used as the dependent variable and game customization and control are used as the independent variable. The data was collected from data from 96 online gamers via online survey. Structural equation modelling (SEM) techniques have been used to analyze this relation. The result shows positive impact of game customization and control on brand recall.

Kimberley young (2009) conducted a research and the aim of the study is to understand online gaming addiction and treatment issues for adolescents. This paper explores the emergence of online gaming addiction and its impact on individuals and families. This paper reviews the nature of online games and what makes them addictive among some players. As computers are relied upon with greater frequency, detecting and diagnosing online gaming addiction may be difficult for clinicians, especially as symptoms of a possible problem may be masked by legitimate use of the Internet. This paper reviews the warning signs of online gaming addiction, adolescent issues. Involved in gaming addiction, especially as the industry targets youth, and parenting and therapy considerations for this emergent client population.

Tseng, chang, Lee and teng (2018) conducted a research and the aim of the study is to examine how does gender swapping impact online gamer loyalty. The purpose of this paper is to examine this issue and develop hypotheses based on interdependence theory in the online gaming context. Responses from a survey of 255 online gamers were used for the analysis. Analytical results using structural equation modeling indicate that gender-swapping behavior is negatively related to social intelligence, which in turn is negatively related to network convergence, thus contributing to relational switching costs and online gamer loyalty.

Tanford and Suh (2013) conducted a research and the aim of the research is to examine the interrelationships among behavioral intentions, customer satisfaction, perceived value, corporate image and service quality in the gaming industry. A multi-level and hierarchical model is used as a framework to synthesize the effects of customer satisfaction, perceived value, corporate image and service quality on behavioral intentions of customers in the gaming industry. The data used in this study were based on a sample of 470 at a newly built casino in Macau. Data were analyzed using exploratory factor analysis and regression analysis. The findings support using a multi-level model consisting of three primary dimensions and ten sub-dimensions to conceptualize and measure perceived service quality.

Huang and hsieh (2011) conducted a research and the aim of the research is to explore the factors affecting consumers' loyalty toward online games based on the uses and gratifications theory and the flow theory. The research employed two approaches to collect data: personal interview and online survey. Each data collection approach consists of two phases to overcome method bias. This study adopted structural equation modeling to analyze the data. The results focusing on popular massively multiplayer online role-playing games reveal that players' sense of control, perceived entertainment, and challenge affect their loyalty toward an online game.

Balci and Salah (2015) conducted a research and the aim of the study is the automatic analysis and identification of verbal aggression and abusive behaviors for online social games. In this paper, we develop tools for validating whether a verbal aggression offense report refers to a real offense or not, in the context of a very popular online social game, called Okey. Our approach relies on the analysis of player behavior and characteristics of offending players. In the proposed system, chat records and other social activities in the game are taken into account, as well as player history. We report our results on data collected over a six months period, involving 100,000 users and 800,000 game records, and illustrate the viability of such analysis, while providing insights on the factors associated with verbal aggression and abusive behavior for social games.

Choi, Yoon and Taylor (2015) conducted a research and the aim of the study is to examine how character presence in advergames affects brand attitude and game performance .This research investigates the impact of character presence in advergames on brand attitude and game performance, and how such effects depend on national culture. A total of 130 students participated in an experiment conducted in the US and Korea. Results show that when the featured brand in an advergame was a publicly consumed product, character's presence (vs. absence) had a positive effect on attitude toward the brand and gaming performance, but when the featured brand was a privately consumed product, character's presence had a negative effect on these variables.

Kim, Lee and Kang (2012) conducted a research and aim of study is to analyze the avatar's user's identification plays important role in satisfying gamers in virtual world. Gamer's attractiveness and satisfaction in virtual has been used as the dependent variable and user's identification and avatar's attractiveness are used as the independent variable. The data was collected from data from 112 online gamers via online survey. Structural equation modelling (SEM) techniques have been

used to analyze this relation. The result shows significant positive impact of avatars on user's identification that increases their satisfaction to play games in virtual world.

2.3 CONCEPTUAL FRAMEWORK
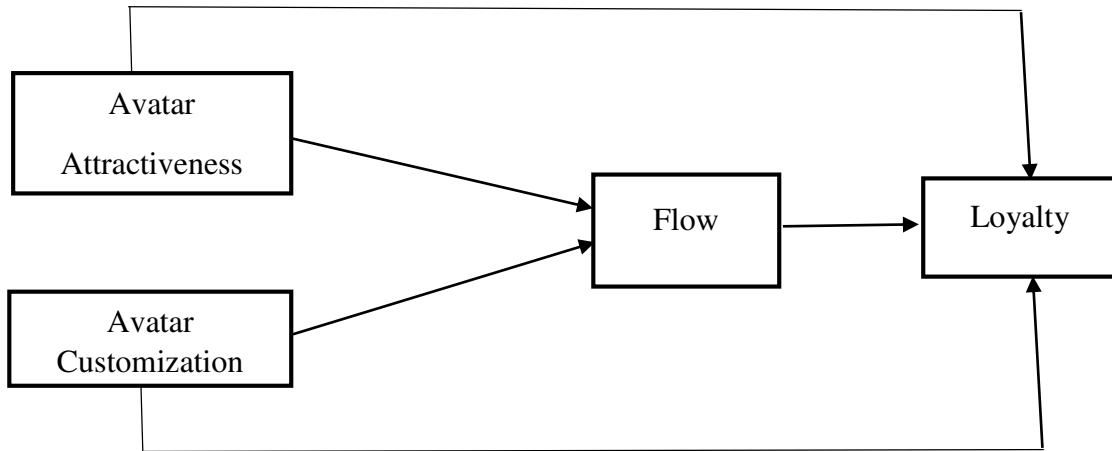
2.4 HYPOTHESIS

H01: Avatar's attractiveness has significance impact on gamer's loyalty

H02: Avatar's attractiveness has significance impact on flow

H03: Avatar's customization has significance impact on gamer's loyalty

H04: Avatar's customization has significance impact on flow

H05: Flow has significance impact on gamer's loyalty

CHAPTER 3

METHODOLOGY

3.1 RESEARCH PURPOSE

The purpose of this research is explanatory research because we are extending research where we will examine the attractiveness and customization impact on online gamers. The purpose of this research is explanatory research because we are extending research where we will examine the attractiveness and customization impact on online gamers. Exploratory research is characterized as an examination used to explore an issue which isn't obviously characterized. It is directed to

have a superior comprehension of the current issue; however, it will be unable to give challenged outcomes (Raza et al., 2017). For such an exploration, a specialist begins with a general thought and uses this examination as a medium to recognize issues that can be the concentration for future research. A significant perspective here is that the scientist consider it as a necessity to be happy to change his/her heading subject to the disclosure of new information or knowledge. Such an examination is normally done when the issue is at a fundamental stage. It seems to give the attention indirectly as grounded hypothesis approach or interpretive research as it used to address addresses like what, why and how (Raza et al., 2020)

3.2 RESEARCH APPROACH

In this research paper quantitative research approach is used to analyze the results (Raza et al., 2019). Quantitative research is structured way of collecting and analyzing data obtained from different sources. It involves the use of computational, statistical, and mathematical tools to derive results. Data has been collected by questionnaire and then data is converted into numerical form to find conclusion from the result of given data.

3.3 RESEARCH DESIGN

In this research correlation design is used. We are using this design because we will explore the relationship among two or more variables.

3. 4 SAMPLING TECHNIQUE

Convenience sampling that is a type of non-probability sampling method is used as a sampling technique because the population who filled our data was easily accessible to us.

3.5 TARGET AUDIENCE/ POPULATION

Our targeted audience is students of Iqra University especially who play games because our research is de pend on avatars that is used in online games.

3.6 SAMPLE SIZE

The sample size selected for the data was based on the guidelines presented by Raza et al. (2019), Qazi et al. (2020), Ali et al. (2019) that the sample of 50 is considered as poor, 300 as good, 500 as very good and 1000 was considered as an excellent sample with respect to factor analysis. Hence, we gathered a total of 500 responses

3.7 STATISTICAL TECHNIQUES

The techniques used in this study for obtaining demographic summary and analyzing the data were SPSS (Statistical Package for Social Sciences) and SMART PLS-SEM (Partial least square-structural equation modelling).

3.8 QUESTIONNAIRE AND MEASUREMENT INSTRUMENT

The data are collected by mode of a questionnaire which was based on a 5 point Likert scale. The questionnaire was completed by university student. Online gamer loyalty is used as dependent variable and avatar attractiveness, avatar identification, avatar customization and flow is used as independent variable. The questionnaire is adopted from study of Liao, G.Y., Cheng, T.C.E., & Teng, C.I. (2019). Every variable consist on 3 items each. The 5 point Likert scale used for this research given as follow: Strongly agree, agree, neutral, disagree and strongly disagree.

3.9 ETHICAL CONSIDERATION

Ethical consideration is most of the important part in research because ethics consider as the behavior norms and standard (Khaskheli et al., 2020). All work like people's identity are used for

this research are kept confidential and no harm will be caused to any identity. Respect for the dignity of research participants should be prioritized.

CHAPTER 4

DATA ANALYSIS

4.1 DATA ANALYSIS

For analyzing the research model PLS-SEM partial least squares method to structural equation modeling was chosen. Data were examined by using the smart PLS 3.1.6 (Ringle et al., 2015; Raza et al., 2020).

4.1.1 DEMOGRAPHICS PROFILE

Respondent's profile (N=501)

Table 1: Demographics
Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	137	27.3	27.3	27.3
Male	364	72.7	72.7	100.0
Total	501	100.0	100.0	

Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Undergraduate	354	70.7	70.7	70.7
Graduate	139	27.7	27.7	27.7
Post Graduate	8	1.6	1.6	1.6
Others	0	0.0	0.0	100.0
Total	501	100.0	100.0	

The details of demographics profile is clearly shown in the Table 1. As seen in the table, 27.3% were female and remaining 72.7 were male. In terms of education, there were 70.7% respondents were undergraduates, 27.7% were graduates and rests 1.6% were post graduates.

4.1.2 RELIABILITY ANALYSIS

Reliability analysis is used to measure reliability of questionnaire that weather it is measure those outcomes which we need for our research or not.

Table 2: Reliability Statistics		
Construct	**Cronbach's α**	**Items**
AA	**0.671**	**3**
AC	**0.722**	**3**
F	**0.686**	**3**
L	**0.855**	**3**

NOTE: AA= Avatar's Attractiveness, AC= Avatar's Customization, F= Flow and L= Loyalty

INTERPRETATION

Table 2 shows the reliability of all the variables. If Cronbach's alpha is nearest to 1.0 so the questionnaire is reliable. According to Tabachnick and Fiddell, (2007) Cronbach's alpha of all the variables should be more than the standard value which is 0.55.

The first variable Avatar's Attractiveness has 3 items and the value of alpha is 0.671. The second variable Avatar's Customization has 3 items and the value of alpha is 0.722. The third variable Flow has 3 items and the value of alpha is 0.686. Last variable Loyalty has 3 items and the value of alpha is 0.855. All the variables have alpha values more than 0.55 so it ensures the reliability of the data.

4.1.3 FACTOR ANALYSIS

Factor analysis is a data reduction technique which we used in our research report.

Table 3: Factor Analysis			
	AA	**AC**	**F**	**L**
AA1	0.811			
AA2	0.836			
AA3	0.677			
AC1		0.858		
AC2		0.745		
AC3		0.799		
F1			0.788	
F2			0.793	
F3			0.655	
L1				0.845
L2				0.857
L3				0.888

NOTE: AA= Avatar's Attractiveness, AC= Avatar's Customization, F= Flow and L= Loyalty

INTERPRETATION:

There is a weak relationship between variables if the value lies in the range of 0.01 to 0.3. Moreover, there is a moderate relationship between variables if the value lies in the range of 0.31 to 0.7 and there is a highly correlated relationship between variables if the value is greater than 0.7. As shown in the table 3 all the variables values were greater than 0.7 so all the variables were highly correlated.

4.1.4 REGRESSION ANALYSIS

Regression analysis helps us to find the relationship between independent and dependent variable (Raza et al., 2020).

| | | **Table-4 Regression Analysis** | | | | |
Hypothesis	**Regression Path**	**Effect type**	**B-Coefficients**	**P Values**	**Remarks**
H1	AA -> F	Direct effect	0.385	0.000	Supported
H2	AA -> L	Direct effect	0.132	0.033	Supported
H3	AC -> F	Direct effect	0.415	0.000	Supported
H4	AC -> L	Direct effect	-0.041	0.515	Not Supported
H5	F -> L	Direct effect	0.523	0.000	Supported

NOTE: AA= Avatar's Attractiveness, AC= Avatar's Customization, F= Flow and L= Loyalty

4.2 DISCUSSION

Table 4 shows the regression analysis report. The first hypothesis resulted in that there is positive and significant relationship between avatar's attractiveness and flow because (β=0.385, P<0.1).

The result of our research is consistent with the result of Westerman et al, (2015) and Behrend et al, (2012). According to them the strong impact of avatar's attractiveness influences the users' flow.

Second hypothesis resulted in that there is positive and significant relationship between avatar's attractiveness and loyalty because (β=0.132, P<0.1). Our result is supported by the past studies of Yee et al, (2009) and Teng and Chen (2014). According to them gamers using more attractive avatars walk closer to others and becoming extroverts and in result joining the teams, team participation satisfies gamers' social needs, thus enhancing gamer loyalty.

Third hypothesis resulted in that there is positive and significant relationship between avatar's customization and flow because (β=0.415, P<0.1). Our result is supported by the past studies of Ratan and Sah (2015) and Hamari et al. (2017). According to them users tend to design and create avatars based on their own personality and this customization positively contributes to gamers' flow.

Fourth hypothesis resulted in that there is negative and insignificant relationship between avatar's customization and loyalty because (β=-0.041, P>0.1). The result of our research is consistent with the result of The result of our research is inconsistent with the result of past studies of Teng 2010 and Tajfel and Turner (1986) which states that Avatar's customization positively contributes to immersion satisfaction and gamers' loyalty. In our context there are more other variables like the game features that affect gamers' loyalty.

Fifth hypothesis resulted in that there is positive and significant relationship between avatar's customization and flow because (β=0.523, P<0.1). Our result is supported by the past studies of

Cao et al, (2018) and Shao, (2018). According to them flow positively contributes to use intention, i.e., loyalty.

CHAPTER 5

CONCLUSION & RECOMMENDATIONS

5.1 CONCULSION

The purpose behind this research is to find the impact of avatar attractiveness and customization on online gamers' flow and loyalty .A total of 500 questionnaires were found usable from online gamers of Pakistan .Structural Equation Modeling (PLS-SEM) was used to evaluate the relations. In this study, we develop a research model grounded in the theory of avatar attractiveness and customization on online gamers' flow and loyalty has cleared ways for elaborative research to understand consumer behavior in online context. Reason Avatars are known to be influential in gaming correspondence. In any case, little is known about how avatar attractiveness and customization impact online gamers' flow i.e., the experience of complete interest in characteristic enjoyment and loyalty. Through findings hypothesis results reflects that avatar attractiveness and customization has significance impact on gamers loyalty and flow. And flow has significance impact on gamers' loyalty. However, avatar identification and flow are two important significant procedure factors in the above relations.

5.2 MANAGERIAL IMPLICATION / RECOMMENDATIONS

As this study was conducted that how avatar attractiveness and customization can impact online gamer flow and loyalty. The managers of the avatar making can take it concern our research in order to develop avatar ability to achieve unique avatar image and positive image.

Moreover we can specify online games provide should increase the attractiveness of designed avatar. We can find that avatar customization fuels avatar identification which is to turn creates flow and loyalty in online game. We can also find that avatar identification is very important element to attract online gamers flow and loyalty

5.3 FUTURE RECOMMENDATIONS

The present research is restricted to the 501 respondents of avatar attractiveness and customization can impact online gamers flow and loyalty. The future recommendations of this study are that more researchers can add more variables to determine the impact of avatar attractiveness and customization. Adding more variables will give researchers more exposure to evaluate gaming influence on online gamers. During this research, a lot of resources were not available so those resources could be used in upcoming time.

Furthermore, researchers should extend this study and can add more market generated content according to respondent's desires into research model to engage more and more online gamers. The generalizability of the results of present study are limited as the data was collected only from the limited people of Karachi which could not reflect the behaviours of online gamers from all over the country . The future researchers can also add more factors which are affecting online gamers' behaviour. We can also recommend that avatar customization attract more people it could

be more attracted add to the e-commerce literature by rebuilding the perceived avatar appearance

agreeableness and avatar friendliness.

CHAPTER 6

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