Factors Influencing Player Loyalty in Online Mobile Games

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Abstract: *The research entitled, "FACTORS INFLUENCING PLAYER LOYALTY IN ONLINE MOBILE GAMES" is carried out to explore and examine the factors affecting the loyalty of a player in online mobile games. Player loyalty and retention rate in mobile game shave important influence on the mobile game development firms. Loyalty in the current study has five independent variables which are, experience level, flow control, motive for the game, curiosity and identification with the character. The sample size calculated for the study is 200 and includes majorly of college going students belonging to the age group of 18 – 25. A questionnaire was formed according to the variables using goggle forms and was sent out to fill. The collected response validity with the loyalty of the players towards the game was verified with various tests performed through SPSS. Descriptive analysis, factor analysis, and reliability tests were conducted. The results showed there is significant and positive effect of all the 5 considered variables on loyalty of players in online mobile games. Among the independent variables curiosity has the highest alpha value with 0.896. Thus through the study and results we suggest that developers should aim at making the game curios at each stage, that is in line with player identification.*

Keywords: Loyalty, Experience level, Flow control, Motivation, Curiosity and Identification with the character

1. Introduction

The development of mobile games has given a new dimension to the gaming industry. Starting from the launch of Snake by Nokia in1997, the simple feature that came along with phone is now a criterion for the purchase of mobile phones today. With rapid growing users every day, mobile game industry is a blooming at higher rate every year. The massive technology advancement has supported the way mobile games are perceived by the users today. From keypad to touchpad, the gaming industry has evolved multiple folds and now has multi player, advance graphics and has formed potential loyal customers. With almost one third of the world population (approximately 2.4 billion mobile game users) players, the industry is still growing like never before. The gaming category is as popular as music and social media apps in every play store, be it android or IOS. The advent of numerous gaming alternatives and growing customer needs has made Game developer a popular job with attractive salary package. The retention rate of customers is highly complicated as the customer base is practically more through virtual interface lacking physical communication. According to report by Game Analytics, less that 15 percent of the 35 percent of the mobile games are retained after installation in Day 1. Mainly because of the high level of alternatives available the retention rate is seen as a losing battle in the industry. Thus the research aims to understand the features that have made few mobile games, more desirable than the other available. As ultimately a loyal customer is what every brand and company aims for, the survey tries to evaluate which are those features a customer is more attracted to.

Statistical facts on mobile game
- As of the third quarter of 2020 it is observed that, there are approximately 385, 551 mobile gaming application available.
- According to the statistics available, that is 5.6 percent increase in comparison with the previous year.
- Our country alone clocked around 7.3 billion game downloads between January and September during the lockdown according to app analytics.
- According to App analytics data nearly 20 percent of world mobile game downloads was contributed by India alone.
- Mobile games contribute more than 51 percent of global gaming revenue in comparison with PC games and Console games.

2. History

Understanding Gamification has become a new branch of study with growing customer rate and much business venturing into it. Previous research has made a note that Customer loyalty in online games has various antecedents which mainly include inflow, satisfaction, social interactions, gratification and challenges.

2.1 Literature Review

1) TING-JUI CHOU, and CHIH-CHEN TING, (2003), in their research article uses cyber-game addiction syndrome as an analogue to trace the possible causes of consumer addiction. Results from structure equation modeling represented that repetition of favorite activities has a

moderate effect upon addiction, which is in line with the rational addiction theory. SEM using AMOS28 is employed to test the proposed hypotheses. Flow experience, behavioral repetition, addictive behavior were the variables under consideration for the study. The flow components empathy and discovery are attractive experiences that lead to goal and obsession of mobile games.

2) Janarthanan Balakrishnan and Mark D. Griffiths (2018), their research examined the relationship between online mobile gaming addiction and loyalty towards purchase intention of online mobile game in-game apps. The study consisted of 430 students from two major Indian universities who completed a short 28-item survey focusing on three variables. A two-step structural equation modeling with direct and indirect effects was performed to test the hypotheses. Variance test was conducted using ANOVA. The results demonstrated that online mobile game addiction had positive effect on loyalty and in game purchase.

3) HyoungkooKhang a, Jung Kyu Kim b ,Yeojin Kim c (2013), in their research article focuses to explore levels of media consumption. Focusing specifically on the use of video games and mobile phones the study identified four psychological factors self-esteem, self-efficacy, self-control and dispositional media use motives. The results indicated that self-control most significantly affected both users' flow and addiction in relation to their use of the Internet, video games, and mobile phones. Multiple regression analysis was the statistical tool used in the analysis.

4) DONGSEONG CHOI, Ph.D., and JINWOO KIM, M.S (2004), in their article proposes a theoretical model using the concepts of customer loyalty, flow, personal interaction, and social interaction to understand why people continue to play online mobile games that has network communication. Statistical tools such as Factor analysis and LISREL analysis were used to examine the study. The study concludes that personal interaction in the mobile games can be used to influence the private goals.

5) Yu-Shan Sua , Wei-Lun Chiang a , Chin-Tarn James Lee b , Han-Chao Chang (2016), aims to understand whether factors influence the player loyalty (PL) of game users through flow experience. The study verified the proposed hypothesis by administering a questionnaire survey on the mobile game application "Tower of Saviors". A structural equation modeling analysis and the FQCA method were adopted. According to the empirical study results, human computer interaction, social interaction, skill and challenge had positive influenced flow experience.

6) Bong-Won Park and Kun Chang Lee (2008), this paper proposes a new research model in which users' perceived loneliness and stress have relationships to game loyalty through other experiential factors such as flow, enjoyment, and character identification. An empirical analysis was performed on 187 valid questionnaires using PLS (Partial Least Square). Results revealed that the research model is statistically significant, and loneliness and perceive stress hold crucial position in the users' loyalty to games.

7) Namjae Cho, SeungikBaek, Sarah Shek, Kyoungmun Ryu, Sanghyuk Park (2001), in their research examines several factors that affect player loyalty to online games. In this research article, an integrated model is included to explain and predict player loyalty to online games is proposed. Two studies were conducted to test the research model. An analysis of 334 respondents, the first study finds that the impulsive personality of individual players significantly affects both behavioral loyalty and cognitive loyalty.

8) Ching-I Teng (2013), the research investigates how such challenges increase customer loyalty to online games. The study sample comprises 2,861 online gamers. Structural equation modeling is implemented. Analytical results indicate that the relationship between challenge and loyalty intensifies when customers perceive that overcoming challenges takes a long time. Results of this study contribute to efforts to determine how challenges and challenge-related perceptions impact player loyalty in mobile games.

2.2 Research Gap

- Grounded theory of customer loyalty involved only 17 respondents from various different countries
- Not considering other variables along with flow experience to understand the loyalty of players towards mobile games.
- Classifying online games into more specific genre whether the game is multi player and has interactions over the time spent within the game.
- Some study recruited the survey respondents and other few focused on specific group of students belonging to a certain branch of education
- One research issued the valid respondents will be eligible for winning a lottery ticket on some amount, which is an artificial induction of posing their requirements.
- Flow in the game is considered as an intermediate variable rather than a independent variable and rest other factors affecting flow and indirectly loyalty. A study with considering other factors in direct effect over loyalty is not carried out.
- Flow theory conducted research on players of specific game called 'Tower of saviors', thus it cannot be concluded to other specific popular games as well.

3. Research Design

3.1 Introduction

The current study aims at overcoming the gaps of the previous research gap. Thus along with the flow control there are other four variables such as experience, motive for the game, curiosity and identification of the character to understand their effect on loyalty. The survey focuses on understanding the perceptions of the game that a player is playing over a long

period of time. The research respondents are high level college going students in comparison with the employed segment of players. Regression and reliability test was carried out through an SPSS software tool and the results concluded that the considered independent variables have a significant effect on the loyalty towards the mobile game application.

3.2 Objective

- To examine the effect of experience level in mobile games on loyalty.
- To examine the effect of motivation on loyalty, in mobile games.
- To understand the effect of flow control on loyalty, in mobile games.
- To understand the effect of curiosity on loyalty, in mobile games
- To understand the effect of identification with characters on loyalty, in mobile games.
- To examine whether loyalty towards mobile games is leading to addiction.

3.3 Sampling Method

Convenience sampling is the technique adopted in the current study. Based on the willingness and availability participants took part in the filling the questionnaire sent through Google forms. Convenience sampling is a type of non – probability sampling that involves sample being extracted from that part of the population that is close to availability and interest.

3.4 Sample Size

A sample is the percentage of the population that is considered to represent the total population. The sample size for the current research is 200. The confidence level for the survey is set to 90 percent. The margin of error is plus/ minus 5.83 percent for the above mentioned values of sample size and confidence level. The Z value for the considered value is plus/ minus 1.96.

3.5 Data Collection

The data was collected through a structural questionnaire formed in Google forms. The Google forms were sent to many students and employees belonging to different organizations and had interest in playing online mobile games and had at least an year of experience. Over a period of 2 weeks the data was collected. The questions were about experience, flow motive for the game, curiosity, identification of the character and loyalty towards the mobile game they played on the daily basis and had got comfortable with the interface of the mobile game application.

3.6 Questionnaire Design

Based on the literature review and the conceptual model formed, questionnaire was developed to examine the reliability of the identified independent variables and their significance on loyalty. Along with that, personal information was collected to avoid repetition of the respondents and also the favorite game, the players played currently to understand the popular game in trend.

3.7 Conceptual Model

FIGURE 1 represents the conceptual model proposed in the current study. It includes experience level, motive for the game, flow control, curiosity and identification with the character as the independent variables. With dependent variable has loyalty. In the research we utilize the independent factors effect on the dependent variable i.e., we the examination the factors, analysis of whether these factors have significance over the loyalty of a player in mobile games is compiled and results are explained.
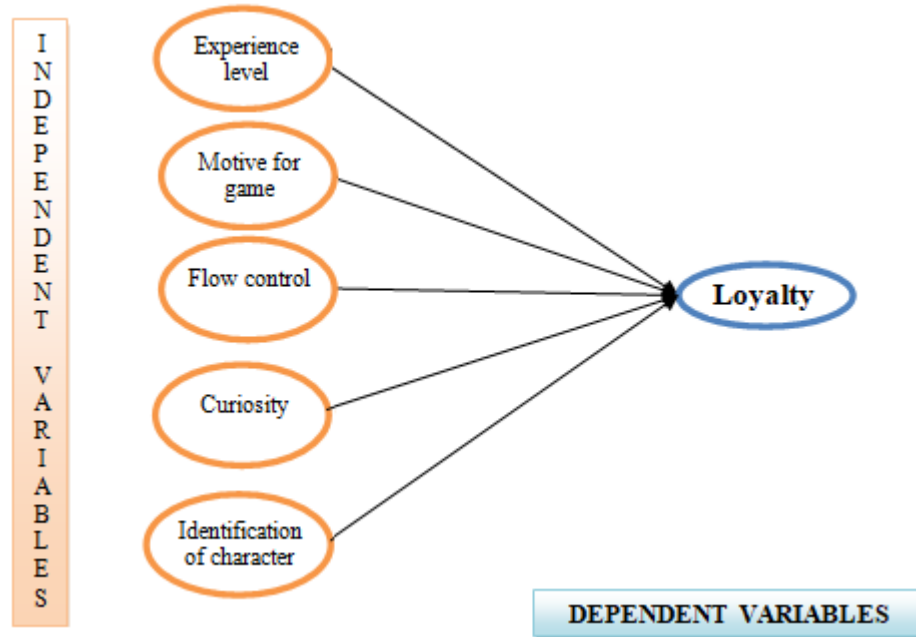
Figure 1: Conceptual Model

3.8 Hypothesis

Experience Level
H1: Experience level in mobile game is positively related to loyalty towards game.
HO: Experience level in mobile game has no relation to loyalty towards game.

Experience in terms of content, graphics and ease to adopt with new features, determines the players mastery towards the game. The data is collected to understand, the involvement of mobile game in day to day life of the players. The statistical analysis showed that the reliability alpha value was 0.826 and beta value of 0.742 in regression test. Thus null hypothesis is rejected and alternative hypothesis is accepted.

Motive for the Game
H2: Motivation to play mobile game is positively related to loyalty towards the mobile game.
HO: Motivation to play mobile game has no relation to loyalty towards the mobile game.

In the current research motive for the game is defined as the intention that drives the player to play mobile games. The intention could be recreation, entertainment, competency, stress reduce etc. As the purpose is fulfilled the players are more interested towards the game. Motivation is the key factor that affects the loyalty and addiction, as it initiates the desire to play. The statistical analysis showed that the reliability alpha value was 0.833 and beta value of 0.672 in regression test. Thus null hypothesis is rejected and alternative hypothesis is accepted.

Flow Control
H3: Flow control while playing mobile game is positively related to loyalty towards the game.
HO: Flow control while playing mobile game has no relation to loyalty towards the game.

Flow control is defined as a combination of personal presence, environmental presence and social presence of the player, while playing the mobile game. Flow explains the emotions and involvement a player experiences while playing the game. Player being highly influenced by the game experiences he/she is virtually inside the game and is in control of the direction that game is moving forward. A sense of accomplishment that drives to play more, with each level completed. The statistical analysis showed that the reliability alpha value was 0.858 and beta value of 0.820 in regression test. Thus null hypothesis is rejected and alternative hypothesis is accepted.

Curosity
H4: Curiosity about the mobile game is positively related to loyalty towards the game.
HO: Curiosity about the mobile game is not related to loyalty towards the game.

Explorative feature in the game that keeps the player captured and seized to the game. Curiosity to explore what is beyond every level and what awaits after accomplishment of a mission assigned in the game, keeps the player committed to the game. Curiosity is bridging the gap between what a person already knows and what they want to know more about a particular idea. The statistical analysis showed that the reliability alpha value was 0.896 and beta value of 0.815 in regression test. Thus null hypothesis is rejected and alternative hypothesis is accepted.

Identification with the Character

H5: Identification with the character is positively related to loyalty towards the game.

HO: Identification with the character is not related to loyalty towards the game.

Identification with the character regards to conceptualization of self in the game a player is playing. It is proven from previous research that identification with a character makes the game more fun to play. The trending gaming apps offer voluminous roles such as soldier, home décor, chef, commander etc and has attracted many players to involve more in the game. Identification with a character is also termed as 'wishful identification'. This phenomenon is, attaching an emotional appeal to the player towards the game. The statistical analysis showed that the reliability alpha value was 0.873 and beta value of 0.739 in regression test. Thus null hypothesis is rejected and alternative hypothesis is accepted.

Loyalty

H6: Loyalty towards mobile game is positively related to addiction towards the game.

HO: Loyalty towards mobile game has no relation towards addiction of mobile games.

Loyalty is often known as the tendency of the customers to use the same product (repetitive purchase), irrespective of the competitor and new inventions in the market. Previous research has made a note that Customer loyalty in online games has various antecedents which mainly include inflow, satisfaction, social interactions, gratification and challenges. Loyalty is what a company or a brand aims for, keeping their customer attentive and fulfilling the needs. The statistical analysis showed that the reliability alpha value was 0.896 and beta value of 0.874 in KMO test. Thus null hypothesis is rejected and alternative hypothesis is accepted.

3.9 Statistical Tools Used:

Descriptive analysis: A descriptive statistic is a statistical summary that quantitatively describes features from a collection of data. Standard deviation, gives the value on how much deviation the values are from mean. Skewness measures the degree and direction of asymmetry. Kurtosis is a measure of the heaviness of the tails of a distribution.

Reliability test: Cronbach's alpha is the test to carry out internal consistency of the data collected accordingly to each variable. The test helps us to understand the extent of consensus among the respondents and their homogeneity in their answers.

Regression analysis: The statistical analysis estimates the relationship between two or more independent variables and a dependent variable. The test helps to determine which factors matters the most among the factors in consideration.

4. Data Analysis

The collected data from the 200 respondents is gone through series of statistical analysis. Descriptive, reliability, regression and rotated component matrix are test performed in the current research. Each table along interpretation is explained in the next section of the study.

4.1 Reliability Test, KMO and Descriptive Analysis Data

Table 1.1: Reliability Statistics of Players experience level

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.839	5

Table 1.2: Reliability Statistics of Motive for the game

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.833	0.836	5

Table 1.3: Reliability Statistics of Flow control

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.858	0.864	5

Table 1.4: Reliability Statistics of Curiosity

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.896	0.897	5

Table 1.5: Reliability Statistics of Identification with the character

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.873	0.884	5

Table 1.6: Reliability Statistics of Loyalty

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.896	0.898	5

The test results had alpha value above 0.8 in all factors ensuring the data confident and consistent with values. A 1 – tailed correlation matrix was extracted, hence the alternative hypothesis is accepted and null hypothesis is rejected.

KMO TEST

Table 2.1: KMO and Bartlett's Test of Players experience level

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.821
Bartlett's Test of Sphericity	Approx. Chi-Square	383.270
	Df	10
	Sig.	.000

Table 2.2: KMO and Bartlett's Test of Motive for the game

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.821
Bartlett's Test of Sphericity	Approx. Chi-Square	362.824
	Df	10
	Sig.	0

Table 2.3: KMO and Bartlett's Test of Flow control

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.799
Bartlett's Test of Sphericity	Approx. Chi-Square	487.1
	Df	10
	Sig.	0

Table 2.4: KMO and Bartlett's Test of Curiosity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.948
Bartlett's Test of Sphericity	Approx. Chi-Square	4455.579
	Df	435
	Sig.	0

Table 2.5: KMO and Bartlett's Test of Identification with the character

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.839
Bartlett's Test of Sphericity	Approx. Chi-Square	541.152
	Df	10
	Sig.	0

Table 2.6: KMO and Bartlett's Test of Loyalty

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.874
Bartlett's Test of Sphericity	Approx. Chi-Square	601.692
	Df	10
	Sig.	0

Descriptive Statistics Data

Table 3.1: Descriptive Statistics of Players experience level

	N	Range	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
E1	200	4	4.3	0.06536	0.92427	0.854	-1.481	0.172	1.972	0.342
E2	200	4	3.55	0.08558	1.2103	1.465	-0.436	0.172	-0.797	0.342
E3	200	4	4.21	0.06204	0.87735	0.77	-1.19	0.172	1.378	0.342
E4	200	4	4.27	0.05614	0.79388	0.63	-1.071	0.172	1.257	0.342
E5	200	4	4.32	0.05246	0.74186	0.55	-1.115	0.172	1.8	0.342
Valid N (listwise)	200									

Table 3.2: Descriptive Statistics of Motive for the game

	N	Range	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
E1	200	4	3.945	0.07131	1.00849	1.017	-0.809	0.172	-0.005	0.342
E2	200	4	3.815	0.07232	1.02274	1.046	-0.675	0.172	-0.174	0.342
E3	200	4	4.22	0.06063	0.85748	0.735	-1.165	0.172	1.441	0.342
E4	200	4	4.275	0.05442	0.76963	0.592	-0.984	0.172	1.141	0.342
E5	200	4	3.97	0.07295	1.03171	1.064	-0.993	0.172	0.543	0.342
Valid N (listwise)	200									

Table 3.3: Descriptive Statistics of Flow control

	N	Range	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
F1	200	4	3.485	0.0905	1.27983	1.638	-0.388	0.172	-0.968	0.342
F2	200	4	3.48	0.09214	1.30311	1.698	-0.369	0.172	-1.065	0.342
F3	200	4	4	0.07401	1.04665	1.095	-0.983	0.172	0.433	0.342
F4	200	4	4.26	0.05856	0.82815	0.686	-1.108	0.172	1.123	0.342
F5	200	4	3.88	0.07554	1.06832	1.141	-0.632	0.172	-0.639	0.342
Valid N (listwise)	200									

Table 3.4: Descriptive Statistics of Curiosity

	N	Range	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
C1	200	4.00	4.1500	.06251	.88397	.781	-.960	.172	.528	.342
C2	200	4.00	4.1350	.06787	.95989	.921	-1.032	.172	.468	.342
C3	200	4.00	4.0550	.07475	1.05715	1.118	-.961	.172	.106	.342
C4	200	4.00	4.0850	.06488	.91760	.842	-1.116	.172	1.187	.342
C5	200	4.00	4.2750	.06137	.86784	.753	-1.544	.172	2.784	.342
Valid N (listwise)	200									

Table 3.5: Descriptive Statistics of Identification with the character

	N	Range	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
I1	200	4	3.84	0.0846	1.19648	1.432	-0.861	0.172	-0.225	0.342
I2	200	4	4.195	0.066	0.93345	0.871	-1.372	0.172	2.034	0.342
I3	200	4	4.3	0.0634	0.89667	0.804	-1.474	0.172	2.188	0.342
I4	200	4	4.235	0.06496	0.91869	0.844	-1.349	0.172	1.872	0.342
I5	200	4	3.75	0.08988	1.27105	1.616	-0.662	0.172	-0.798	0.342
Valid N (listwise)	200									

Table 3.6: Descriptive Statistics of Loyalty

	N	Range	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
L1	200	4	4.22	0.06386	0.90315	0.816	-1.111	0.172	0.895	0.342
L2	200	4	4.035	0.07448	1.05324	1.109	-0.983	0.172	0.283	0.342
L3	200	4	3.99	0.08357	1.1819	1.397	-1.032	0.172	0.108	0.342
L4	200	4	4.14	0.073	1.03234	1.066	-1.253	0.172	1.09	0.342
L5	200	4	4.06	0.08009	1.13261	1.283	-1.083	0.172	0.243	0.342
Valid N (listwise)	200									

4.2 Regression Analysis

Experience level:

Table 4.1: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	EL	.742	.048	.742	15.563	.000
a. Dependent Variable: LOYALTY						

- The beta value is .742 seen in Table 4.1, says the correlation between the variables. That means with every unit increase in loyalty there is .742 unit of contribution of experience on it.
- The significance value is equal to 0 thus the null hypothesis can be rejected and alternative hypothesis of there is a positive relation between experience and loyalty is accepted.

Motive for the game:

Table 4.2: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	M	.672	.053	.672	12.757	.000
a. Dependent Variable: LOYALTY						

- The beta value is .672 seen in Table 4.2, interprets the correlation between the variables. Signifying with every unit increase in loyalty there is .672 unit of increase of motive for the game.
- The significance value is equal to 0 thus the null hypothesis can be rejected and alternative hypothesis of there is a positive relation between motive for the game and loyalty is accepted.

Flow Control

Table 4.3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	F	.820	.041	.820	20.130	.000
a. Dependent Variable: LOYALTY						

- The beta value is .820 from Table 4.3, interprets the correlation between the variables. Signifying a strong effect of flow control over loyalty towards mobile gaming application.
- The significance value is equal to 0 thus the null hypothesis can be rejected and alternative hypothesis of there is a positive relation between flow control and loyalty is accepted.

Curiosity

Table 4.4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	C	.815	.041	.815	19.822	.000
a. Dependent Variable: LOYALTY						

- The beta value is .815 from Table 4.4, interprets the correlation between the variables. Signifying a strong effect of curiosity over loyalty towards mobile gaming application.
- The significance value is equal to 0 thus the null hypothesis can be rejected and alternative hypothesis of there is a positive relation between curiosity and loyalty is accepted.

Identification with the character:

Table 4.5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	I	.739	.048	.739	15.427	.000
a. Dependent Variable: LOYALTY						

- The beta value is .739 from Table 4.5, interprets the correlation between the variables. Signifying a strong effect of identification with the character over loyalty towards mobile gaming application.
- The significance value is equal to 0 thus the null hypothesis can be rejected and alternative hypothesis of there is a positive relation between identification with the character and loyalty is accepted.

4.4 Rotated Component Matrix of Independent Variables

The overall questionnaire with five different variables was grouped and extracted as three components, shown in Table 5. The highest influencing factor in each of the component extracted were as follows,

- Whenever I make a mistake in the game, I recover easily.
- Challenges I take up during role playing makes the game more interesting.
- I spend endless hours to explore mobile - games to improve my skills.

From the above statements we can understand that, players self-esteem on his/her capability to accomplish a level, will lead to more chances for the players to like the game they are currently playing. With challenges in every level and up gradation with add on features the players are excited about what comes the next. The curiosity to explore each level and gaming application being up to the expectations will create strong customer loyalty base. Spending endless hours, not only create bonding with the game but also help the company to earn more and have constantly engagement with the mobile game application.

Table 5: Rotated component matrix

Factors	Component		
	1	2	3
E5	.738		
E3	.695		
E4	.639		
C5	.638		
F4	.629		
E1	.625		
M4	.623		
C1	.595		
C4	.592		
M3	.583		
C2	.529		
C3	.523		
F3	.502		
I3		.807	
I4		.776	
I1		.745	
I2		.739	
I5		.567	
F1			.743
M2			.729
M5			.666
F2			.659
M1			.650
E2			.594
F5			.506
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 9 iterations.			

5. Findings

It was proven that loyalty in mobile games is dependent on independent variables considered which are flow control, experience, and motive for the game, curiosity and identification with the character. Among the considered variables, flow control and curiosity have the highest beta value of 0.820 and 0.815. Thus the gaming application developer should take a note and develop a game that has lot of twists and adventures, with each level having different set of expectations to be achieved by the players.
Among the independent variables curiosity has the highest alpha value with 0.896 and rest four variables flow control, experience, motive for game and identification with the character have 0.833, 0.826, 0.858 and 0.873 respectively.

Rotated component matrix implied the top three components, with values 0.738, 0.807 and 0.743, have more effect considerably than other. The three question talk about challenges and identification with the character.

5.1 Suggestion

- Among the surveyed respondents PubG and candy crush were the most popular games played.
- Both games have constant up gradation, with less mobile data in requirement and allow interaction among the players.
- PubG allows a strong character with different design hence identification with the character is as important as any other variables for constant engagement and long-time reliability with the customers towards a mobile game application.
- Hence other mobile game application can develop with good interaction skills that allow the player to do more exploration with each passing level.

5.2 Future Scope

To the current study, the researchers can add the influence of social media and influencers for the mobile game users. Thus the study would help in social media campaign and other diversification for the current marketing expectations.

The game developers should aim to develop a mobile game application, that has inbuilt interaction availability, through networking it will bring in more customers and build a strong customer identification to specific gaming community.

Character identification is a feature that helps game bond with a player on various level, with curiosity combined with role playing, a customer retention rate will be considerably increase over the time.

5.3 Conclusion

Among the surveyed respondents PubG and candy crush were the most popular games played. Both games have constant up gradation, with less mobile data in requirement and allow interaction among the players. PubG allows a strong character with different design hence Identification with the character is as important as any other variables for constant engagement and long-time reliability with the customers towards a mobile game application.

With the dynamic and ever changing market bundled with enormous other competitive companies entering the gaming application every day, a company should develop a strong advantage feature oriented game. With every level a player accomplishes, the next level should be equally balanced between challenge and finding a solution to the level and move to the next level.

Apart from the above mentioned criteria, the companies should continuously update with current trends and bring in new techniques to capture and retain the current market.

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