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IMPACT OF GAMIFICATION ON CUSTOMER EXPERIENCE AND PERCEIVED VALUE IN THE SRI LANKAN TELECOMMUNICATION MARKET

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ABSTRACT

The telecommunication services industry has grown rapidly in Sri Lanka over the past few decades. But, for a tiny island nation with a relatively low population figure, the number of active telecommunication service providers operating in the country is considerably high. In the current market situation, no service provider has a competitive edge over technology. Hence, companies take the customer experience very seriously as the perceived value towards the service provider is one of the main deciding factors for a customer when gamification. Thus, this study aims to identify the effect of gamification and customer experience on perceived value in the Sri Lankan Telecommunication market. A representative sample of 200 gamification users was selected and the feedback was collected using a structured questionnaire. Using SPSS 24 software, the characteristics of the sample were analyzed through descriptive statistics, and research objectives were achieved by testing hypotheses using correlation and regression analysis. The results evidenced that the relationships between gamification and perceived value, gamification and customer experience, and customer experience and perceived value have a significant, moderate & Opositive linear relationship. Further, it was found that customer experience provides a significant, partial, and positive impact on gamification and perceived value. The findings of the study help practitioners to uplift the use of gamification in their marketing strategy.

Keywords: Customer Experience, Gamification, Perceived Value, Telecommunication Industry

1. Introduction

The telecommunications sector in Sri Lanka is one of the most dynamic sectors, contributing significantly, to investment, employment,

productivity, innovation, and overall economic growth. Sri Lanka's telecommunication market has five mobile operators serving a population of 22 million. With rising usage, the total fixed line and mobile telephone density have reached 142 per 100. Significant competition is there in Sri Lanka, among three fixed-line operators, five mobile phone operators, and 11 Internet service providers (Daniel, 2024; International Trade Administration, 2024) leading to a saturated market situation. In the current market situation, no service provider has a competitive edge in the technology they offer as they all provide broadband internet subscriptions, and they all create a similar product. (Numbers.lk, 2023; TNS.lk, 2022). However, customers always expect companies to provide more value for less pay, causing tense competition, and making them prioritize the customer experience.

Gamification—the process of enhancing services by providing a gaming experience to support the user's overall value-creation process (Huotari, 2012) which helps Sri Lankan telecommunication service providers attract and retain customers. Since it increases customer engagement and creates customer loyalty (Tamburrelli, 2013). Customer experience is the key attribute to forming the consumer environment which helps organizations to generate positive perceived value with the use of a variety of marketing mechanisms (Shih-Chih Chen, 2015). Gamification is one concept companies can use to improve the user's online experience. A survey conducted by ExpressVPN revealed that millennial gamers are more dedicated to gaming than their Gen Z counterparts. They tend to have a stronger emotional connection to gaming, with many citing it as a form of stress relief and social connection (ExpressVPN, 2023). Some of the telecommunication service providers in Sri Lanka now use gamification techniques in their marketing campaigns. For example - The "Dialog Mega Run", a gamified mobile application, was introduced to customers by Dialog Axiata PLC. Sri Lanka Telecom PLC introduced a mobile game application named "Kimaki", which is an adventure category mobile game, where they can move up in the leaderboard while winning free data and other exciting gifts (Roar, 2019; The Island Online, 2022). The other key competitors in the market have not reached their maximum potential of applying gamification concepts yet, in their marketing activities. It seems like they implement gamification without a proper study or understanding of the concept.

Since gamification is a new concept for Sri Lanka, marketers have huge grey areas on how an effective design can be realized to enhance the customer experience and the perceived value. Recently, few studies have been done in the Sri Lankan context on to use of Gamification in the marketing context such as Gamification as a platform for brand engagement (Hewapathirana, 2023) and the impact of online Gamification preferences on brand engagement and brand attitudes

(Thashani, 2023), but still a knowledge gap exists, especially about the context of the impact of gamification on customer relationship and perceived value in the telecommunication service providers in Sri Lanka. Further, increased user engagement provides several benefits, such as improved performance and greater user satisfaction, which is especially relevant for the younger generations who grew up with games (Caserman et al., 2023). To address the new generations of Sri Lanka better, in order to attract and retain them as customers, using gamification marketing practices is extremely vital. Therefore, the research problem of this study is “Whether gamification marketing practices in the Sri Lankan telecommunication industry influence customer experience and perceived values of services.”

Accordingly, the following research objectives are developed: To explain the effect of gamification attributes and user experience on users' perceived values of the services in the Sri Lankan telecommunication service sector; examine the relationship between gamification attributes and user experience in the Sri Lankan telecommunication service sector; evaluate the role of user experience on the relationship between gamification attributes and users' perceived values in the Sri Lankan telco service sector.

2. Conceptualization and Methodology

2.1. Conceptual Framework

As per the literature, this study considered customer-perceived value as the dependent variable and gamification attributes as independent variables. Customer experience is the mediation variable.

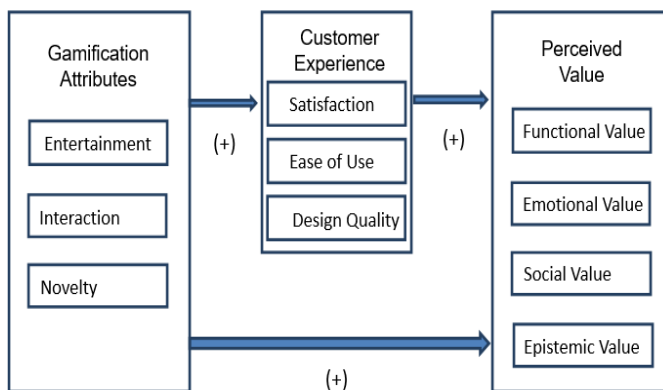


Figure 1: The Conceptual Framework. (Source: Author Developed referring Past Literature.)

2.2. Hypothesis Development

User experience—a collection of the overall experience, that not only involves a customer, but also crucial involvement of a person (LaSalle, 2002) reflected in more than one level and every form of interaction

between the person and the company's products or services. This highlights the importance of enabling people to have outstanding experiences that exceed their expectations at every interaction with their product or service provider (Sheng, 2012). Literature relevant to gamified experience and the perceived value when consumers use gamified websites, shows a positive relationship (Sigala, 2015). However, empirical studies that provide evidence of the impact of gamification on consumer behavior which leads to perceived value from the perspective of marketing are still lacking (Hamari, Koivisto, & Sarsa, 2014; Hamari 2013). Therefore, the first hypothesis of the study is, ***H₁: Gamification attributes positively influence users' perceived values in the Sri Lankan telecommunication industry.***

Game mechanics is the design principle applied by the brand to develop a positive, interesting, and interactive customer experience, which remains unchanged when the customer interacts with the gamification experience (Robson, 2015). Once people get the sense of this unique experience, they are even persuaded to pay an immense price for recreating this experience as it is so pleasant (Csikszentmihalyi, 1990). Hence, customer experience is a key element of gamification, originating from mastery of challenges within a specific environment and the resulting positive feeling of capabilities. Therefore, the second hypothesis of the study is, ***H₂: Gamification positively influences users' experience in the Sri Lankan telecommunication industry.***

The value represents the assessment of experience on consuming a product or service. Hence, it is the key factor that could create a direct and positive impact on the value of the product or service. Hence, a positive user experience can create positive perceived value. LaSalle, (2002) highlighted that customer experience is the most suitable element to effectively handle the concept of consumption, as now this concept involves not only a single transaction-level consumer but also the overall personal experience over multiple periods. To create value in a consumer's mind, an organization should cultivate a user experience in which every aspect of the consumer relationship is outstanding and exceeds expectations (Shenga, 2012). Therefore, the third hypothesis of the study is, ***H₃: Users' experience of services positively influences users' perceived values in the Sri Lankan telecommunication industry.***

When users achieve goals related to the task, the game mechanics reward the customer with points, badges, or any other appreciation method. Based on their achievements, rankings and leaderboards can be created to further stimulate customers' competitive behavior (Liu, 2011). Further integration of computerized gameplay and social network activities into the new online environment has now created a complex interactive platform ecosystem, in which consumers are content creators and task performers (Breidbach, 2014). It can gain

insight into player preferences and the corresponding customer behavior, thereby optimizing the participation experience of all relevant parties (Verleye, 2014). Hence, it is suggested that the customer experience can play a mediation role for the gamification attributes and the perceived value. Therefore, the fourth hypothesis of the study is, ***H₄: Users' experience of services mediates the relationship between gamification attributes and perceived values in the Sri Lankan telecommunication industry.***

2.3. Operationalization of Variables

After referring to past literature, dimensions were identified against the three main constructs of the conceptual framework. As per Figure 1, the dimensions of entertainment, interaction, and novelty were identified under gamification attributes (Hsu, 2018; Kim, 2012). Accordingly, three main dimensions were identified for customer experience satisfaction, ease of use, and design quality (Hsu, 2018; Yang, 2017). Further, functional value, emotional value, social value, and epistemic value are used to measure the customer's perceived value (Hsu & Chen, 2018). These identified dimensions were further broken down into indicators for measuring the identified dimensions.

2.4. Population and Sample Size

In the Sri Lankan Telecommunication market, only Dialog Axiata PLC and Sri Lanka Telecom PLC are currently using gamified applications in their marketing strategy. Hence, the customers who have experience in these two gamified applications were only surveyed for this research, making the population size approximately 500,000. The study had 10 dimensions. As per multivariate research, the sample size should be preferably 10 times or larger than the number of variables in the study (Roscoe, 1975; Sekaran, 2007).

The convenience sampling method was used for sample selection to ease the process of finding respondents who already had the gamified experience to answer the questionnaire. First, the customers who have already reviewed the Dialog Mega Run application and the SLT-Kimaki application were identified, their names were searched on social media and the questionnaire was sent to them as a private message through social media. More than 500 potential users were contacted through email and Facebook, and 220 responses were collected representing 44% response rates. This method enabled the selection of participants from various backgrounds such as age and occupation to obtain a representative sample.

2.5. Research Instrument

An online questionnaire was distributed, that was structured with questions to measure the constructions and the demographic

information of the respondents. Similar studies have used the same strategy to collect data, thus it is expected to work effectively with the current study (Chakraborty, 2019; Wahab & Nagaty, 2022). The answers to the questions were collected using the five-point -Likert scale.

3. Data Analysis, Findings, and Discussion

When it comes to descriptive statistics, the independent variable “Entertainment” shows the highest mean of 3.84. The standard deviation for this variable is 1.00. Novelty has the lowest mean of 3.42 and a standard deviation of 0.974. Interaction has the highest standard deviation of 1.13, as the values are spread out over a relatively larger range than other variables. The mean Interaction is 3.66. The customer experience factors Satisfaction, Ease of Use, and Design Quality have the lowest standard deviations of 0.830, 0.844, and 0.879, respectively, and mean values of 3.59, 3.78, and 3.75, respectively.

As the first step of the data analysis, the characteristics of respondents who participated in the survey were analyzed with descriptive statistics. Out of the 220 respondents to the survey questionnaire, 169, (77%) were males while only (23%), 51 respondents were female. As per the five categories of age, most of the respondents were in the age 18 to 25 category, which is 35%. And 159 were unmarried, which is a percentage of 77%. The highest number of respondents are students, (88) 40% of the total respondents. 45 graduates have responded to the survey, which is 20%. According to the survey results most of the respondents were at an income level of less than Rs. 10,000/=, which is 31%. This is understandable, as most of the respondents were students. The number of participants who have more than Rs. 100,000/= income is 29%.

3.1. Reliability and Validity Test

First, to test the validity and reliability of the data set Cronbach’s Alpha (Sekaran, 2008, p311) values were checked and factor analysis was carried out. As per the findings, all the variables showed the respective Cronbach’s Alpha values to be greater than 0.7. In addition, past literature and practical cases from different countries which were done in the areas of gamification, customer experience, and perceived value for various products and services were used as sources for identifying the variables. The validity of the identified variables was checked using the principal component factor analysis with varimax rotation. By this procedure, new components were extracted by selecting the factors that had an eigenvalue greater than one (1.00). Further, the rotated factor loading matrix was applied for the variables that had an eigenvalue greater than one (1.00). If any value was found to be less than 0.5, they were considered invalid and removed without analyzing further. Hence, validity and the reliability of the study are ensured.

3.2. Scatter Plot and Normal Distribution Plot

Before moving into regression analysis, the normality of the relationship was checked using the scatter plot, and the normal distribution was checked using the histogram for the relationships between the independent and dependent variables.

3.3. Simple Regression Analysis

3.3.1. The Relationship between Gamification and Perceived Value

Table 1: Model Summary for Gamification & Perceived Value.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	.557a	.311	.307	.824	1.605

Table 1 illustrates the regression model summary. R-value measures the correlation between independent variable gamification and dependent variable perceived value, which was 0.557 and R^2 describes the variance among two variables, which is 0.311. This result explains that 31% of the variance influencing the customer perceived value is done by correct gamification attributes.

Table 2: ANOVA for Gamification & Perceived Value.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.622	1	66.622	98.183	.000b
	Residual	147.923	218	.679		
	Total	214.545	219			

According to ANOVA Table 2 for gamification and perceived value, the F value is around 98.183. Hence, at the 0.000 level, the overall model is significant.

Table 3: Coefficients Table for Gamification & Perceived Value.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.338	.221		6.064	.000
	GA_ET_01	.551	.056	.557	9.909	.000

As per Table 3, the Beta value for gamification and perceived value was 0.557. This explains why the two variables have a positive relationship. Hence, to achieve a higher percentage of perceived value, increasing the effective gamification attributes used is necessary. Thus, we can conclude the relationship between gamification and perceived

value is a moderate but significant and positive relationship. Hence the regression equation formed as:

$$\text{Customer Perceived Value (Y)} = 0.551 * \text{Gamification Attributes (X)} + 1.338.$$

3.3.2. The Relationship between Gamification and Customer Experience

Table 4: Model Summary for Gamification and Customer Experience.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.685a	.469	.467	.652	1.960

Table 4 illustrates the regression model summary. R-value measures the correlation between independent variable gamification and dependent variable customer experience, which was 0.685 and R² describes the variance among two variables, which is 0.469. This result explains that 46.9% of the variance influencing the customer experience is done by correct gamification attributes.

According to ANOVA Table 5 for gamification and customer experience, the F-value is around 192.895. Hence at the 0.000 level, the overall model is significant.

Table 5: ANOVA for Gamification and Customer Experience.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	81.941	1	81.941	192.895	.000b
	Residual	92.605	218	.425		
	Total	174.545	219			

Table 6: Coefficients Table for Gamification and Customer Experience.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	1.198	.175	6.863	.000
	GA_ET_01	.611	.044	.685	13.889

As per Table 6, the Beta value for gamification and customer experience was 0.685. This explains why the two variables have a positive relationship. Hence, to achieve a higher percentage of customer experience, increasing the effective gamification attributes used is necessary. Thus, we can conclude the relationship between gamification and customer experience is a moderate but significant and positive

relationship. Hence, the regression equation formed as:
Customer Experience (Y) = 0.611* Gamification Attributes (X) + 1.198.

3.3.3. The Relationship between Customer Experience and Perceived Value

Table 7: Model Summary for Customer Experience and Perceived Value.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.622a	.387	.385	.776	1.833

Table 7 illustrates the regression model summary. R-value measures the correlation between the independent variable customer experience and the dependent variable perceived value, which was 0.622 and R² describes the variance among two variables, which is 0.387. This result explains that 38.7% of the variance influencing the perceived value is done by customer experience.

Table 8: ANOVA for Customer Experience and Perceived Value.

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83.126	1	83.126	
	Residual	131.419	218	.603	137.891
	Total	214.545	219		.000b

According to ANOVA in Table 8 for gamification and customer experience, the F value is around 137.891. Hence at the 0.000 level, the overall model is significant.

Table 9: Coefficients Table for Customer Experience and Perceived Value.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	1.008	.215		4.691	.000
	CE_SF_01	.690	.059	.622	11.743	.000

As per Table 9, the Beta value for customer experience and perceived value was 0.622. This explains why the two variables have a positive relationship. Hence, in order to achieve a higher percentage of perceived value, increasing customer experience is necessary. Thus, we can conclude the relationship between customer experience and perceived value is a moderate but significant and positive relationship.

Hence the regression equation formed as:
 Customer Perceived Value (Y) = 0.690* Customer Experience (X) + 1.008.

3.3.4. Computing the Mediating Effect of Customer Experience Using Multiple Regression Analysis

Table 10: Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.648a	.420	.414	.757	1.785

Table 10 illustrates the regression model summary. R-value measures the correlation among the two independent variables gamification attributes and customer experience and the dependent variable perceived value, which was 0.648 and R² describes the variance among the two variables, which is 0.420.

Table 11: ANOVA Table.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	90.041	2	45.020		
Residual	124.505	217	.574	78.466	.000b
Total	214.545	219			

According to ANOVA in Table 11, the F-value is around 78.466. Hence at the 0.000 level, the overall model is significant.

Table 12: Coefficient Table.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.736	.224		3.287	.001
GA_ET_01	.244	.070	.246	3.472	.001
CE_SF_01	.503	.079	.454	6.389	.000

a. Dependent Variable: PV_FV_01

As per Table 12, the Beta value for gamification attributes to perceived value was 0.244, and the Beta value for customer experience to perceived value was 0.503. This explains the two independent variables and the dependent variable has a positive relationship. Therefore, increasing both the use of gamification attributes and customer

experience effect in increasing the percentage of perceived value.

As per Baron and Kenny (1986), multivariate assumptions (normality, linearity, homoskedasticity, independency) were fulfilled, allowing a regression analysis to be performed. Regression analysis for finding the relationship between gamification and customer experience has a significant positive relationship as the Beta value = 0.557; the relationship between gamification and perceived value has a significant positive relationship as the Beta value = 0.685; the relationship between customer experience and perceived value has a significant positive relationship as the Beta value = 0.622; and the relationship of both gamification and customer experience with perceived value has a significant positive relationship as the Beta values = 0.246 & 0.454. The beta value when Gamification taking with customer experience is lower (0.246) than the beta of regression analysis of Gamification taking with perceived value, which is Beta = 0.557. But since, significantly, partial mediation exists according to Baron and Kenny (1986). Hence, customer experience has a **partial mediating effect** to generate a relationship between Gamification and Perceived Value.

3.4. Discussion of Findings

The main objective of this research is to find out how the effect of gamification could change the customer experience and the perceived value of the customers towards the Sri Lankan Telecommunication service providers. The outcome of the research will help these companies when formulating their marketing strategy. According to the analysis carried out in this research the relationship between gamification and perceived value, the relationship between gamification and customer experience, and the relationship between customer experience and perceived value have **moderate & positive** linear relationships which are significant. These findings are also consistent with past studies (Sigala, 2015; Kesari, 2016; Kim, 2015). Therefore, gamification can be used to increase the perceived value and the customer relationship, and it is necessary to increase the customer experience to increase the perceived value. According to Verleye (2014), advocates of gamification experience believe that it can gain insight into player preferences and the corresponding customer behavior, thereby optimizing the participation experience of all relevant parties. Past literature suggests that the customer experience can play a mediation role for the gamification attributes and the perceived value. According to (Baron, 1986), customer experience provides a **partial & positive** impact on gamification and perceived value, which is significant. Therefore, to achieve higher perceived value, customer experience needs to be improved. Thus, the overall findings of this research are aligned and are consistent with the findings of past literature.

4. Conclusion, Implications, and Future Research

Out of all the Sri Lankan telecommunication companies, only Dialog (Pvt) Ltd and Sri Lanka Telecom PLC use gamification in their marketing strategy. The Dialog Mega run mobile application has one million downloads and the SLT Kimaki mobile application has only 5000 downloads in the Google Play Store. When considering the total mobile broadband customer base of both companies, only a small portion of their total customer bases used it up to April 2021, indicating that both companies still have room to grow in the field of gamification. In the context of using Gamification to enhance the customer experience and perceived value in the telecommunication companies in Sri Lanka, it has not reached its maximum potential yet.

This study also reveals that the majority of the users who use the gamification application are students in the age of below 25 years, justifying the income level distribution of the respondents, as the majority were earning less than Rs.10,000/= per month. If they can create a good perceived value among these students regarding the service offered, there is great potential that they could create a lifelong customer base. As per the research findings, the use of gamification has a positive impact on customer perceived value, and it could increase customer experience. Further, telecommunication companies can use gamification and customer experience to increase the perceived value among their customers. The marketers in Sri Lankan telecommunication companies can use the findings of this unique research to present innovative solutions to their customers in the field of gamification all while providing much-needed academic evidence on the effects and benefits of gamification towards enhancing brand perception in the context of Sri Lankan telecommunication market which were lacking before.

To improve customer engagement in gamification activities, management could offer free trials and free data usage for the gamification app to attract new users, give away exciting prizes and virtual currencies redeemable for service provider bills, and integrate the gamification app with the self-care app to ease the process. Encouraging creative marketing strategies, providing training on gamification, and promoting research on its impact are also important. The gamification drive can initiate a great social impact positively by creating and improving cohesiveness among people as the players would get together to share their ideas and experiences about the game to improve their winning chances, especially using groups created on social media platforms. Further, once people are more engaged with gamification activities, their soft skills and speed of decision-making improve (Dholakia, 2004).

Some limitations applied to the research due to factors like time and resource limitations; sampling bias; and less homogenous sample.

Therefore, future researchers can increase the sample size, and an alternative sampling method could be used. Further, the sample can be made more homogenous by using some alternate data collection method, so the female respondents are more persuaded to give their genuine feedback for the study and the research could be carried out for different geographical areas separately. Also, this study could be carried out including the potential users on gamification activities and extend the research to users from other service providers as well.

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