

## Gamified Interaction: Driving Brand Emotions Through Co-Creation

Lubna PK<sup>1</sup>, Dr.T. Mohamed Nishad<sup>2</sup>

<sup>1</sup>Research scholar PG & Research Department of Commerce. Farook College (Autonomous), Kozhikode. Kerala, India.

Email Id: [lubna@farookcollege.ac.in](mailto:lubna@farookcollege.ac.in)

<sup>2</sup>Professor.PG & Research Department of Commerce. Farook College (Autonomous), Kozhikode. Kerala, India.

Email ID: [nishad@farookcollege.ac.in](mailto:nishad@farookcollege.ac.in)

Cite This Paper as: Lubna PK, Dr.T. Mohamed Nishad, (2025) Gamified Interaction: Driving Brand Emotions Through Co-Creation. *Journal of Marketing & Social Research*, 2 (1), 43-51.

### ABSTRACT

Purpose-. Applications related to gaming have long been known to benefit greatly from the incorporation of game features, which can increase user engagement and overall efficacy. This study aims to investigate the relationships between social related game feature, customer brand engagement, brand co-creation and brand love.

Design/methodology/approach- Using the most popular social related game feature in sports & fitness brands. The study uses random sampling technique. The data were collected from 277 active sports & fitness brand users. AMOS 24.0 was used to analyse the data.

Findings- Social interaction game feature strongly influences customer brand engagement. Moreover, customer brand engagement positively influences brand co-creation. Brand co-creation mediates the relationship between social related game feature and brand love.

Originality/value- This study identifies the relevance of social game feature in driving behavioural and emotional intents in light of SDT theory. In addition, it contributes to gamification literature, by explaining mere introduction of social game feature do not drive behavioural and emotional intents, as the direct relationship between social interaction feature and brand love is insignificant. So, employing better co-creation tactics make sense. Given the paucity of conceptual and empirical research on the subject in the existing literature, this study offers new perspectives on gamified brand management techniques.

**Keywords:** Social related gamification feature, customer brand engagement, brand co-creation, brand love.

### 1. INTRODUCTION

It is widely accepted that the most effective driving force behind people's actions is intrinsic motivation.(Deci, 1971) However, it is frequently noted that people are not intrinsically motivated to engage in the various activities they would like to. Therefore, a lot of businesses, schools, and organisations are vying for these individuals' motivational resources.(Xi & Hamari, 2019) The primary objective of customer relationship building in the marketing context is to create a consumer who adores the brand and the product.(Hollebeek et al., 2014) Gamification successfully encourages behavioural changes, such as conquering personal obstacles and raising employee motivation, by utilising intrinsic motivation.

The concept of gamification is relatively new; its earliest recorded use dates to 2008, and it has only just started to gain widespread traction during the second half of 2010.(Deterding et al., 2011) The idea behind it is largely based on games, which are primarily made to amuse players and compel them to invest a lot of time and energy in them. However, it is well noted that playing games can enhance our cognitive, emotional, and social development in addition to keeping us captivated and intrinsically driven. Several tactics (such as gamification) have been included into technology-based applications to encourage behavioural changes in physical activities, utilising evidence-based methods from behaviour change theories(Rehman et al., 2024) To draw in and keep users interested, creative engagement techniques are essential.

Gamification, on the other hand, seeks to make more appealing non-gaming products and services while also benefiting from the game's features. Since the term was hotly debated in the video game and digital media industries, many designers came up with other labels for their own work to prevent misunderstandings regarding gamification.(Saprikis & Vlachopoulou, 2023) Many empirical studies on gamification are focused on specific topics, such as education(Christy & Fox, 2014) and wellness and health (Alahäivälä & Oinas-Kukkonen, 2016),Marketing(Koivisto & Hamari, 2019). The depth and scope of gamification research in commercial settings must be further expanded.



Since more and more people are looking for inspiration and engagement to keep up their fitness adventures, it is vital to consider how gamified experiences affect customer engagement.(Rehman et al., 2024).Gamification and engagement are related, and its application is typically justified by the way it boosts client engagement. (Jain, S et al., 2023) When customers are engaged in the sense that they are present and focused on the brand and its associated attributes, they will become involved in the information provided by the brand and develop a deep relationship with it.(Shin, M & Back, K.J, 2020) Furthermore, consumers frequently develop lifelong relationships with products that catch their eye.(Kumar et al., 2010). Customers of companies like Apple, Disney, and Harley Davidson, for example, are extremely loyal and involved and aggressively spread brand love. (Anbumathi, et al., 2023; Tsou & Mukti Trio Putra, 2023)

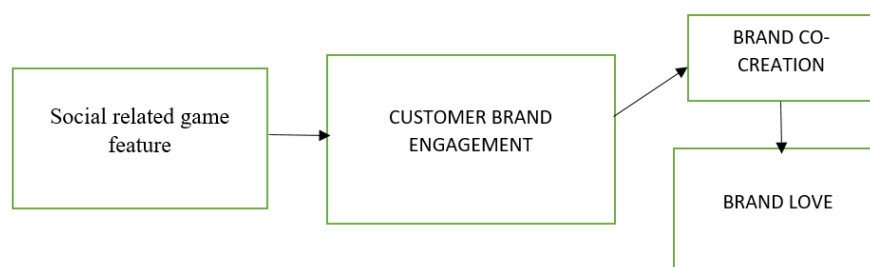
None of the studies explored the influence of social gamified features in driving behavioral and emotional outcomes. The extant literature includes the aspect of gamification features comprehensively, and its combined effect on engagement, co-creation and love are separately studied. Integrating all the behavioral and emotional outcomes by chalking out social game features makes sense. The extant literature goes underexplored about the influence of social interaction feature of gamification in driving brand love through customer engagement and brand co-creation.so, the gaps are found critical in theoretical and managerial perspectives, so we form research questions based on this:

- To what extent does social interaction game feature influence customer brand engagement?
- To what extent does Customer brand engagement influence brand co-creation?
- To what extent does brand co-creation influence brand love?

By elucidating how consumers assess social interaction game features, this study closes the gaps in the existing literature. By looking at how gamification features eventually influence customer behaviour, we also contribute empirical information to the expanding gamification field. The application of the Self Determination theory is important, since it offers a rational theoretical framework for examining gamification features in customers' brand co-creation and brand love.

## 2. LITERATURE REVIEW:

Drawing from the theory of self-determination, gamified experiences act as a typical motivation for engaging with a brand. Being motivated through gamified interactions, self-directs the users with a higher level of interest towards the brand as they tend to interact and co-create. From the standpoint of SDT, people tend to behave as if they excel out of personal commitment, if they are intrinsically motivated. (Deci,2000). people tend to transform the box rather than go out of the box. Information and communications technologies, which fuelled an unparalleled shift in people's ability to be informed, networked, and empowered, were the main factors propelling this shift to the co-creation of value through human experiences facilitated by the firm's network (including communities outside the firm). (Ramaswamy 2011), as the traditional concept of mere 'services' converted as 'experiences.



**Figure1: [Authors own creation]**

Gamified social interaction:

Social contact, especially the desire to connect with people who have similar interests, is acknowledged in gaming literature as a major motivator for gameplay.(Rehman et al., 2024)The term "social interaction ability" describes pleasure, amusement, group dynamics, socialization, and communication.(Egger et al., 2022; Tabaeian et al., 2024) Due to frequent communication, idea sharing, and reciprocity, gamification features like groups, messages, blogs, social network connections, and chat can give players a stronger sense of belonging.(Andrés Francisco-Aparicio et al., 2013; Xi & Hamari, 2019) Competition among the players generates a strong feeling of belongingness; whereas cooperation paves for working for a shared objective.(Sailer, 2017; Van Roy & Zaman, 2019) This feature of gamification proved to satisfies all types of intrinsic need motivations like, autonomy, relatedness and competence.(Xi & Hamari, 2019)

Customer brand engagement:

Customer engagement is a psychological state that occurs from the interactive process with an agent/object at several



stages(Huang et al., 2024) This term describes any setting where actors engage, whether it is offline, referring to human interaction, or online, referring to the digital features of the platform.(Bouchriha et al., 2023; Hammedi, W et al., 2017) Customers that interact with a brand more frequently are more likely to be satisfied and show more brand loyalty (Weiger et al., 2017; Wirtz et al., 2013). Customers and brands engage in a two-way exchange (Hollebeek et al., 2014). Its foundation is the regulatory engagement theory, which holds that the pursuit of the process affects the goal's worth (Higgins & Scholer, 2009; Solem & Pedersen, 2016). The degree to which a customer invests cognitively, emotionally, and behaviourally in certain brand encounters is known as customer brand engagement. Cognitive processing reveals a person's degree of interest in the brand they are interacting with. Second, emotion expresses how pleased a person is with their experience interacting with the brand. As a result, this idea and how customers feel about the brand are related. Thirdly, the term "behavioural" describes the time and effort that customers invest in connecting with a brand. (Hollebeek et al., 2014; Vivek et al., 2014) social platforms, which allow users to communicate, compete, and exchange experiences, are in line with SDT's relatedness concept. Consequently, this raises user engagement and improves intrinsic motivation.(Rehman et al., 2024) and are influenced by all forms of customer brand engagement.(Xi & Hamari, 2020)Thus, it is presumed:

H1: Social experience related game feature positively influences customer brand engagement

Brand co creation:

Co creation is defined as" "collaborative value creation between the company/brand and the customer, enabling the customer to co-create the service experience to fit needs"(C.K. Prahalad & Venkat Ramaswamy, 2004). Engaging with the customer is the primary step in the co-creation process. One of the main tenets of the process of co-creating experiences is engagement platforms. (Zaneta Piligrimiene et al., 2015)

According to the SDT model, the motivation when internalised and if satisfied all the three intrinsic needs autonomy, relatedness and competence can exhibit positive behaviour in a user. As social interaction feature of gamification influence all forms of engagement(Xi & Hamari, 2020) and the longed engagement with the brand makes the user co-create the brand tends to build loyalty.(C.K. Prahalad & Venkat Ramaswamy, 2004) One key idea in value cocreation is customer engagement. There cannot be value cocreation without consumer engagement. (lie 2020) Although behaviour is a significant component of customer engagement, its psychological nature must be acknowledged for thorough analyses of the construct (Heinonen 2018). According to Beckers et al. (2018), seeing engagement as a resource contribution highlights the additional role that consumers play in value co-creation as well as the interactive nature of this idea throughout the process.

Customers are therefore highly driven to adopt behaviours that uphold the value of the brand Engagement (Tsou & Mukti Trio Putra, 2023)will therefore foster new stages of value creation between the brand and the customer; this is a broad assumption that customer engagement results in customer co-creation behaviour. Hence, we presume

H2: CBE has positive direct influence on brand co creation

Brand love:

The degree of customer-brand ties is known as brand love.(Batra et al., 2012) One characteristic of brand love that was often cited was having a lengthy relationship with the brand. Because of their common past, the cherished brand may have a significant role in the respondent's narrative of self. Because past conduct is frequently a reliable predictor of future behaviour.(Guadagni, P. M & Little, J. D, 1983)Drawing from social exchange theory and SDT theory, the user elicits a behaviour as part of what a consumer intake from the brand side. businesses that invest in their customers to cocreate value in a user-sphere are likely to establish brand love, according to parasocial interaction (PSI), which describes how consumers develop one-way emotional relationships with businesses (Roy et al., 2013; Junaid et al., 2020).

A sense of brand ownership may result from exchanging ideas for improving a brand.(Marcos-Cuevas, J et al., 2016) brand cocreation as a behaviour thus leads to a greater type of passion, which is a result of a higher emotional attachment leading to brand love. Thus, it is presumed that;

H3: Brand cocreation directly influence Brand love.

Hence, deducing from H1, H2 and H3, brand co-creation plays a mediating role between brand love and gamified social interaction feature. Thus, positing this assumption is worth:

H4: Brand Co creation mediates the relationship between social interaction game feature and brand love

### 3. METHODS

Every measurement item was adopted from extant literature and assessed using a five-point Likert scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree". "Social experience(Rehman et al., 2024) game feature was measured using three items to assess how customers feel while inducing gamified interaction methods. Customer brand engagement measured using six items adopted(Khan et al., 2019) from to measure engagement. Brand co creation was measured using four items adopted from(Rather et al., 2023) to measure the subsequent value creation and brand love with six items, adopted from (Tsou & Mukti Trio Putra, 2023)to analyse the consequent affection for the brand.



#### 4. SAMPLING AND DATA COLLECTION:

Businesses have been using gamification in their marketing campaigns to attract more customers, but since the concept is still in its infancy, the focus of this study is on examining gamification practices within the sports and fitness sector. The study's major portion of respondent consists of younger people (ages 22 to 27), who should be viewed as a group of people transitioning from childhood to adult independence.

Data for this study was gathered through a mall intercept survey, designed to target sports and fitness brand users. This pronged strategy made sure that consumers of sports and fitness brands were fully represented. The survey was conducted by using a self-administered questionnaire, employing purposive sampling method. This made it possible for the study to reach participants who are active users of sports and fitness products in actual retail settings. At specific shopping points, participants were contacted and asked to fill out the questionnaire.

In all, 277 samples were gathered between July and August of 2024. 40 samples were eliminated for analysis after a negative response to the question, "Do you ever use gamified sports and fitness products? Seven more responses were eliminated in a subsequent screening to further refine the data. Responses on a scale of 1 to 5 (strongly disagree to strongly agree) were quantified using a Likert scale. 36.1% of the 230 responders were men, and 63.9% were women. Of the sample, 23% were between the ages of 28 and 33, and 50% were between the ages of 22 and 27. As a result, only sports and fitness brand users were included in the sample.

#### 5. ANALYSIS AND INTERPRETATIONS:

Cronbach's Alpha was used to evaluate construct reliability. The findings showed that the three-item Social related game feature scale (.854), the six-item Customer brand engagement scale (0.868), and the four-item Brand co-creation scale (0.842) were all deemed reliable. In a similar vein, the six-item Brand Love Scale was likewise deemed dependable (0.738), as three of the items were removed to keep the consistency of the outer model. Table1 provides a summary of the reliability outcomes.

Constructs	No of items	Alpha
SE	3	0.854
CBE	6	.868
BL	3	0.738
BCC	4	0.842

**Table 1**

AMOS was used to calculate Confirmatory Factor Analysis in order to test the measurement model. Each item's factor loadings were evaluated as part of the confirmatory factor analysis; one item (BL1) was eliminated because of its low factor loadings (<.50). The overall goodness of fit of the model was evaluated using the model-fit metrics (CMIN/df, GFI, CFI, TLI, SRMR, and RMSEA), and all values fell within the range of their respective common acceptance levels. With CMIN/df = 1.8 GFI =.918 CFI =.957, TLI =.947, SRMR =.059, and RMSEA =.056, the four-factor model (Gamified social interaction feature, Customer brand engagement, brand co-creation, and Brand love) produced an excellent fit for the data

**(Table 2).**

Fit Indices	Recommended Value	Source	Obtained Value
P	Insignificant	(Bagozzi & Yi, 1988)	.000
CMIN/DF	3-5	Less than 2 to 5 (Schumacker & Lomax, 2004)	1.8
GFI	>.90	(Hair Jr. et al., 2014)	.918
CFI	>.90	(Bentler 1998)	.957
TLI	>.90	(Bentler,1998)	.947
SRMR	<.08	(Hu & Bentler, 1998)	.059
RMSEA	<.08	(Hu & Bentler, 1998)	.056



Cronbach's Alpha and Composite Reliability were used to evaluate construct reliability. Every construct in the study had Cronbach's Alpha values above the necessary threshold of 0.70 (Nunnally, J.C., 1994) Composite reliabilities above the criterion of 0.70, ranging from 0.895 to 0.97 (Hair, J.F. et al., 2022). As a result, construct reliability was established for every study construct.

Average Variance Extracted was used to determine the convergent validity of the scale items (Fornell and Larcker, 1981). The extracted average variance values exceeded the threshold value of 0.50 (Hair, J.F. et al., 2019). Consequently, the scales employed in this investigation possess the necessary convergent validity (Hair, J.F. et al., 2022)

**Table 3. Loadings, Reliability and Convergent validity.**

Items	Loadings	Alpha	Composite reliability	AVE
Social Experience		0.854	0.969	.671
SE1	0.691			
SE2	0.847			
SE3	0.904			
Customer brand engagement		0.868	0.97	0.535
CBE1	0.612			
CBE2	0.765			
CBE3	0.741			
CBE4	0.783			
CBE5	0.757			
CBE6	0.712			
Brand co creation		0.842	0.96	0.543
BCC1	0.755			
BCC2	0.738			
BCC3	0.655			
BCC4	0.793			
Brand Love		0.738	0.895	0.508
BL2	0.644			
BL3	0.797			
BL4	0.689			

The Hetero trait Mono-trait (HTMT) Ratio and the Fornell and Larcker Criterion were used to evaluate the study's discriminant validity. Using the Fornell and Larcker criteria, discriminant validity is not fully proven in this study. All ratios, however, fell below the necessary threshold of 0.90 when evaluated using the HTMT Ratio (Henseler et al. 2015). Discriminant validity was thus proven.

## 6. HYPOTHESIS TESTING:

	Path	$\beta$	T value	P	Remarks
	CBE<<- SR	.341	4.428	***	Supported



	BC <- CBE	.703	8.654	***	Supported
	BL <<- SR	.057	1.032	.302	Rejected
	BL< – CBE	.372	4.102	***	Supported
	BL <<- BC	.570	5.877	***	Supported

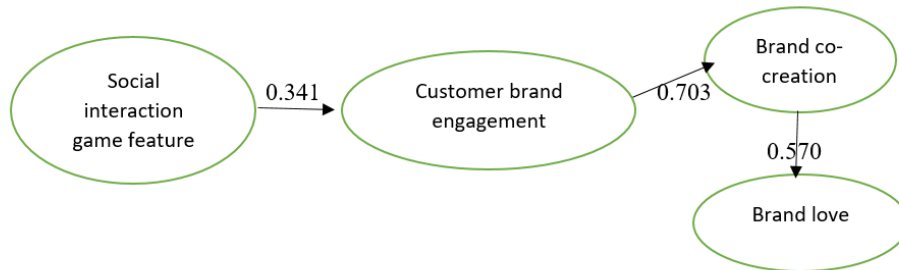


Figure:2 [Authors own creation]

Table 4: shows the results of hypothesis testing. H1 is significantly supported. Social experience game feature has significant effect on Customer brand engagement. ( $\beta = .341$ ,  $t = 4.428$  and  $p < 0.05$ ). Customer brand engagement has positive significant impact on brand co creation as ( $\beta = .703$ ,  $t = 8.654$  and  $p < 0.05$ ). Hence, H2 is supported. While, direct effects of CBE – BL and BC – BL are supported. The  $r^2$  results shows, Social related game features accounts for 12% variance in Customer brand engagement. similarly, customer brand engagement explains 65% of the variance in brand co creation and Brand co creation explains 80% change in brand love.

## 7. MEDIATION ANALYSIS:

The results of the indirect effect through both intervening variables to dependent variable ( $SR \gg BCC \gg BL$ ) was found to be 0.08 p value below 0.05, found significant. However, the direct effect of SR on BL is insignificant as p value is .408. This result shows that there exists full mediation. Hence, H4 is supported.

Path	Indirect effect( $\beta$ )	P-value	Conclusion
SR> BCC > BL	.08	0.003**	Significant

Table:5

## 8. DISCUSSIONS AND CONCLUSIONS:

Social experience related game features positively influence customer brand engagement. The results indicate that social experience game features, one of the prominent game features; has a considerable strength to penetrate brand engagement ( $\beta = .341$ ,  $t = 4.428$  and  $p < 0.05$ ). Shared achievements through social media accounts, team collaboration and competition are the social related game mechanism used. The results posited that those brands which promote inculcating such interaction game features could boost engagement (Xi & Hamari, 2020).

The path  $SR > CBE > BCC$  was found significant ( $\beta = 0.152$ ,  $p < 0.05$ ). This shows the indirect role of social interaction features in beautifying brand co creation activities like reviews, contents, photos and feedbacks. When customers feel engaged and attached to the brand, they feel to collaborate with the brand and to develop innovative experiences.

Consenting the assumption, the results reveals the significant indirect influence of social interaction feature on brand love through these paths  $SR > CBE > BL$  ( $\beta = 0.081$ ,  $p < 0.05$ ) and  $SR > BCC > BL$  ( $\beta = 0.079$ ,  $p < 0.05$ ). This implies that even though the direct role of social related game feature to foster brand love is insignificant, it is powerful in creating conditions





for increased engagement and co creation ultimately developing emotional connections with the brand.it is also evident that brand co creation has a significant and substantial influence on brand love as ,80% variance in brand love accounts for brand co creation. The intermediary role plays of customer brand engagement and brand co creation towards development of emotional brand outcomes like brand love make sense.

## 9. THEORETICAL IMPLICATIONS:

According to the literature review articulated, there are little studies in gamification, brand engagement, brand co-creation and brand love in a single stance. Also, gamification was studied as a combination as features or elements,(Rather et al., 2023; Tabaeian et al., 2024; Tsou & Mukti Trio Putra, 2023) but here the study scrutinized one of the features of gamification and its effects on behavioural and emotional outcomes and the results align with the extant literature. First, we give evidence on the applicability of the SDT theory to explain the influence of social related gamification feature on brand love through consumer brand engagement and brand co-creation. In particular, we uncover an experiential-cognitive process wherein socially relevant game features influence players' psychological state of all forms of engagement,(Xi & Hamari, 2019) which in turn influence their behavioural intents, such as co-creation and love. Collaborations or networking through co-creation reinforces the interaction thereby satisfying the user needs and strengthens value overtime (C.K. Prahalad & Venkat Ramaswamy, 2004) drives loyalty(Tsou & Mukti Trio Putra, 2023). This strongly supports the results revealed in the study as the social experience game feature do not directly drive brand loyalty, suggesting that socially relevant game features are a crucial motive that affects consumers' internal states (customer brand engagement), which in turn leads to brand cocreation and brand love.

Customers invest in the information offered, build a close bond with the brand, and begin co-creating with it when they are present and attentive to the brand and its associated attributes. Therefore, by creating and empirically substantiating elements of cocreation like networking, reviewing that are essential to all gamified sports and fitness businesses, this study adds to the body of knowledge on brand cocreation.((Habachi et al., n.d.; Harrigan et al., 2021; Rather et al., 2023; Thomson et al., 2005). Incorporating customer brand engagement and brand co-creation, this study expands on previous brand love research(Goyal & Verma, 2024; Hsu, 2023; Tsou & Mukti Trio Putra, 2023) and offers a fresh approach.

## 10. MANAGERIAL IMPLICATIONS:

This research gives brand managers profound insights about how to improve customer brand engagement, brand co-creation, and brand love by implementing social interaction game features. Gamification's social interaction component plays a crucial indirect role. For example, social gamified features that foster greater involvement, such as community challenges through cooperative and competitive team interactions and accomplishments and networking should be used by brand managers.

Second, brand managers must make their customers love the brand. From a social gamified perspective, this study suggests that brand managers should apply gamified strategies to create brand love by facilitating customer engagement. For instance, introduction of networking features can enhance the communication of new product launch, review and content sharing leading to carryover and spill over effects in social media. These strategies not only enhance the interaction with the brand but also creating behavioural and emotional intents with the brand.

Third, brand co-creation strengthens the emotional bond with the brand as attached customers if encouraged to co-create can establish love for the brand. Sports and fitness brands can do more to facilitate co-creation like conducting sustainable community campaigns and competitions, crowdfunding and crowdsourcing campaigns, call for collective idea generation contests for new product launch and new workout plans. By involving customers in such activities can foster a sense of ownership and pride for the brand leading to higher levels of passion and loyalty.

## 11. LIMITATIONS:

This study contains some limitations that may guide future research. First, the gamification feature of this argument needs to be broader. This study examined game feature, customer's psychological factors to determine the influence of gamification on customer brand engagement and brand co-creation, so the research findings are quite large. To, obtain comprehensive results, future study should work on one. Second, this study considered only one aspect of gamification features to assess the influence on brand love. There are more game features whose influence can be examined. Therefore, future studies can incorporate gamification features such as achievement and immersion features.

Third, the data were obtained solely in the context of sports and fitness brand users in a single country with customers self-reported data, which limit generalizability to other countries. Examining the same hypothesized relationships in other countries would broaden the evidence on the roles of social interaction game feature, customer brand engagement, brand co-creation and brand love. Sports and fitness sector have got immense attention, due to the increased awareness of body fitness; hence making it an ideal place to research the impact of gamification in multiple countries. Finally, this study covered only the territory of India and exclusively observed users of sports and fitness brands.



## REFERENCES

- [1] Alahäivälä & Oinas-Kukkonen. (2016). Understanding persuasion contexts in health gamification: A systematic analysis of gamified health behavior change support systems literature. 96, 62-70.
- [2] Anbumathi, Dorai, S, & Palaniappan. (2023). Evaluating the role of technology and non technology factors influencing brand love in Online Food Delivery services.
- [3] Andrés Francisco-Aparicio, Francisco Luis Gutiérrez-Vela, José Luis Isla-Montes, & Andrés Francisco-Aparicio, Francisco Luis G José Luis González Sanchez. (2013). Gamification: Analysis and Application.
- [4] Bagozzi & Yi. (1988). On the evaluation of structural equation models. 16, 74-94.
- [5] Batra, Aaron Ahuvia, & Richard P. Bagozzi. (2012). BRAND LOVE.
- [6] Bouchriha, Z., Farid, S., & Ouiddad, S. (2023). Enhancing Value Co-creation Behaviors Through Customer Engagement In The Moroccan Hotel Context: How Does It Influence Customer Satisfaction And Brand Image? *Journal of Quality Assurance in Hospitality & Tourism*, 1–26. <https://doi.org/10.1080/1528008X.2023.2165595>
- [7] Buckley, P., & Doyle, E. (2016). Gamification and student motivation. *Interactive Learning Environments*, 24(6), 1162–1175. <https://doi.org/10.1080/10494820.2014.964263>
- [8] Christy & Fox. (2014). Leaderboards in a virtual classroom: A test of stereotype threat and social comparison explanations for women’s math performance. 78, 66-77.
- [9] C.K. Prahalad & Venkat Ramaswamy. (2004). Co-creation experiences: The next practice in value creation.
- [10] Deci. (1971). Effect of externally motivated rewards on intrinsic motivation. *journal of personality&social psychology*.
- [11] Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining “gamification.”
- [12] Egger, M., Florack, A., & Hübel, C. (2022). How placement affects brand preferences in advergames: A test of inhibition and facilitation processes during search. *Computers in Human Behavior*, 134, 107328. <https://doi.org/10.1016/j.chb.2022.107328>
- [13] Fornell and Larcker. (1981). “Evaluating structural equation models with unobservable variables and measurement error.” 18 No. 1, pp. 39–50.
- [14] Goyal, A., & Verma, P. (2024). The relationship between brand engagement, brand loyalty, overall brand equity and purchase intention. *Journal of Strategic Marketing*, 32(1), 65–79. <https://doi.org/10.1080/0965254X.2022.2149839>
- [15] Guadagni, P. M & Little, J. D. (1983). A logit model of brand choice calibrated on scanner data.
- [16] Habachi, S., Matute, J., & Palau-Saumell, R. (n.d.). Gamify, engage, build loyalty: Exploring the benefits of gameful experience for branded sports apps. *Brand Management*.
- [17] Hair, J.F., Hult, G, Tomas, M., Sarstedt, M., & Ringle, C. (2022). A Primer on Partial Least Squares Structural Equation Modelling (PLS-SEM),.
- [18] Hair, J.F, J.F., Risher, J.J., Sarstedt, M., & Ringle, C.M. (2019). “When to use and how to report the results of PLS-SEM” ,. 31No.1,pp.2-24.
- [19] Hair Jr., J. F., Gabriel, M. L. D. D. S., & Patel, V. K. (2014). Modelagem de Equações Estruturais Baseada em Covariância (CB-SEM) com o AMOS: Orientações sobre a sua aplicação como uma Ferramenta de Pesquisa de Marketing. *Revista Brasileira de Marketing*, 13(2), 44–55. <https://doi.org/10.5585/remark.v13i2.2718>
- [20] Hammedi, W, Leclercq, T, & van Riel, A.C. (2017). The use of gamification mechanics to increase employee and user engagement in participative healthcare services.
- [21] Harrigan, P., Roy, S. K., & Chen, T. (2021). Do value cocreation and engagement drive brand evangelism? *Marketing Intelligence & Planning*, 39(3), 345–360. <https://doi.org/10.1108/MIP-10-2019-0492>
- [22] Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer Brand Engagement in Social Media: Conceptualization, Scale Development and Validation. *Journal of Interactive Marketing*, 28(2), 149–165. <https://doi.org/10.1016/j.intmar.2013.12.002>
- [23] Hsu, C.-L. (2023). Enhancing brand love, customer engagement, brand experience, and repurchase intention: Focusing on the role of gamification in mobile apps. *Decision Support Systems*, 174, 114020. <https://doi.org/10.1016/j.dss.2023.114020>
- [24] Hu, L., & Bentler, P. M. (1998). Fit Indices in Covariance Structure Modeling: Sensitivity to Underparameterized Model Misspecification.
- [25] Huang, M., Mohamad Saleh, M. S., & Zolkepli, I. A. (2024). The moderating effect of environmental





- gamification on the relationship between social media marketing and consumer-brand engagement: A case study of Ant Forest Gen Z users. *Heliyon*, 10(4), e25948. <https://doi.org/10.1016/j.heliyon.2024.e25948>
- [26] Jain, S, Mishra, S., & Saxena, G. (2023). Luxury customer's motivations to adopt gamification.
- [27] Khan, I., Hollebeek, L. D., Fatma, M., Islam, J. U., & Rahman, Z. (2019). Brand engagement and experience in online services. *Journal of Services Marketing*, 34(2), 163–175. <https://doi.org/10.1108/JSM-03-2019-0106>
- [28] Koivisto, J., & Hamari, J. (2019). The rise of motivational information systems: A review of gamification research. *International Journal of Information Management*, 45, 191–210. <https://doi.org/10.1016/j.ijinfomgt.2018.10.013>
- [29] Kumar, Aksoy, L., Donkers, B, Venkatesan, R., Wiesel, T., & Tillmanns, S. (2010). “Undervalued or overvalued customers: Capturing total customer engagement value.
- [30] Marcos-Cuevas, J, Na Etti, S, & Baumann, J. (2016). “Value co-creation practices and capabilities: Sustained purposeful engagement across B2B systems”,.
- [31] Nunnally, J.C. (1994). *Psychometric Theory* (Vol. 3E). Tata McGraw-Hill Education, New York.
- [32] Rather, R. A., Parrey, S. H., Gulzar, R., & Rehman, S. U. (2023). Does gamification effect customer brand engagement and co-creation during pandemic? A moderated-mediation analysis. *Journal of Global Scholars of Marketing Science*, 33(2), 285–311. <https://doi.org/10.1080/21639159.2022.2083000>
- [33] Rehman, U., Abbasi, A. Z., Ting, D. H., Hassan, M., & Khair, N. (2024). Exploring the Impact of Gamified Experiences on User Engagement in Fitness Apps: A GAMEFULQUEST Perspective. *IEEE Transactions on Engineering Management*, 71, 3613–3628. <https://doi.org/10.1109/TEM.2023.3347231>
- [34] Sailer, M. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*.
- [35] Saprikis, V., & Vlachopoulou, M. (2023). A Literature Review and an Investigation on Gamified Mobile Apps in Health and Fitness. In N. F. Matsatsinis, F. C. Kitsios, M. A. Madas, & M. I. Kamariotou (Eds.), *Operational Research in the Era of Digital Transformation and Business Analytics* (pp. 227–234). Springer International Publishing. [https://doi.org/10.1007/978-3-031-24294-6\\_24](https://doi.org/10.1007/978-3-031-24294-6_24)
- [36] Schumacker & Lomax. (2004). Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*. Psychology press.
- [37] Shin, M & Back, K.J. (2020). Effect of cognitive engagement on the development of brand love in a hotel context.
- [38] Tabaeian, R. A., Rahgozar, S., Khoshfetrat, A., & Saedpanah, S. (2024). Can gamification affect the advertising effectiveness in social media? *Journal of Communication Management*, 28(3), 404–422. <https://doi.org/10.1108/JCOM-03-2023-0034>
- [39] Thomson, MacInnis, & Whan Park. (2005). The ties that bind: Measuring the strength of consumers' emotional attachments to brands.
- [40] Tsou, H.-T. & Mukti Trio Putra. (2023). Gamification elements for benefit brand love: The moderating brand love effect of immersion.
- [41] Van Roy, R., & Zaman, B. (2019). Unravelling the ambivalent motivational power of gamification: A basic psychological needs perspective. *International Journal of Human-Computer Studies*, 127, 38–50. <https://doi.org/10.1016/j.ijhcs.2018.04.009>
- [42] Vivek, S. D., Beatty, S. E., Dalela, V., & Morgan, R. M. (2014). A Generalized Multidimensional Scale for Measuring Customer Engagement. *Journal of Marketing Theory and Practice*, 22(4), 401–420. <https://doi.org/10.2753/MTP1069-6679220404>
- [43] Xi, N., & Hamari, J. (2019). Does gamification satisfy needs? A study on the relationship between gamification features and intrinsic need satisfaction. *International Journal of Information Management*, 46, 210–221. <https://doi.org/10.1016/j.ijinfomgt.2018.12.002>
- [44] Xi, N., & Hamari, J. (2020). Does gamification affect brand engagement and equity? A study in online brand communities. *Journal of Business Research*, 109, 449–460. <https://doi.org/10.1016/j.jbusres.2019.11.058>
- [45] Zaneta Pilgrimiene, Aiste Dovaliene, & Regina Virvilaite. (2015). Consumer Engagement in Value Co-Creation: What Kind of Value it Creates for Company?