

GAMIFICATION INTERACTION FEATURES IN LANGUAGE LEARNING APPS, BRAND ENGAGEMENT, AND BRAND-CONSUMER RELATIONSHIP QUALITY

Dr. Irum Alvi

Assistant Professor, Department of Humanities, English and Applied Sciences (HEAS), Rajasthan
Technical University, Kota

Email: irumalvi@gmail.com, ialvi@rtu.ac.in

ABSTRACT

Gamified interactions are extensively used in Language learning apps to make learning languages easier. Gamified interactions are the result of the game-like feature being used to co-create compelling experiences. However, there exists a lack of empirical studies on the efficiency of gamified interaction on brand engagement and brand relationships, which are the main constructs for assessing the métier and worth of the brand in the contemporary framework of language learning apps. The current study aims to fill the research gap by exploring the associations between gamified interaction features in Language learning apps, brand engagement, and brand-consumer relations quality parameters, namely Trust, Commitment and Satisfaction. The proposed conceptual model was validated utilizing the Partial least squares (PLS) structural equation model (SEM) with SmartPLS, using data collected from 152 respondents in March 2022 through an e-questionnaire. The findings showed that interacting with gamified achievement features influenced brand engagement positively and significantly; absorption and social interactions had a minor positive but negligible influence on brand engagement. Brand engagement exerted an affirmative substantial influence on Brand Trust, Commitment, and Satisfaction. Trust has a strong influence on Commitment; Commitment has an affirmative effect on brand satisfaction. These findings imply that gamified interactions may positively influence brand engagement and enhance brand-consumer relations quality in the context of Language learning apps. The theoretical and practical implications were discussed.

Keywords: Gamified interactions, Brand engagement, Commitment, Satisfaction, Language Learning Apps

1. INTRODUCTION

Games are extremely popular nowadays, irrelevant of intrinsic/extrinsic motives (Granic et al., 2014), to the point of addiction (Gioia et al., 2022). Using game elements has increased at an incredible rate for motivating individuals to perform in definite ways (Koivisto & Hamari, 2019), and to encourage learning, and problem-solving (Kapp, 2012). As a result, 'Gamification' is now a hot topic for research among professionals and academicians (Hamari & Parvinen, 2018), as well as marketing researchers interested in improving consumer engagement with their brands (Wunderlich et al., 2019). 'Gamified interactions' are the result of the game-like feature being used to co-create compelling experiences, which are now being extensively used in Language learning apps.

The central objective of this study is to investigate the effect of Gamified interaction features in Language learning apps on users.

Language learning apps provide content, exercises, and interactive assessments to users which enhances their language proficiency. With consistent practice, users learn vocabulary, pronunciation, and even grammar. They provide language learning for a fraction of the cost of a formal language learning session with an instructor; some are free or have a free trial period. Users may also upgrade the plans intended for unlimited usage. Another benefit of these applications is that users study at their own pace. Moreover, the gamified interactions/ images/ AI-based auditory visual aids used in the apps, make language learning stress-free; some even provide goal-oriented learning for which the user needs to subscribe to premium plans.

Given the vast volume of literature on gamification, there are still inadequacies in empirical, theoretical, and analytical methodological techniques employed for the investigation of gamified interaction features

in Language learning apps and their effects, particularly in India, a developing country. There is also a mounting interest of firms, policymakers, and academics in emerging economies, in India (Gupta & Srivastava, 2021). The current study was conducted to keep abreast of the latest gamified elements incorporated in Language learning apps, to scrutinize novel advances and fill the persevering gaps, and to offer suggestions, both practical and managerial. An exhaustive literature review on gamification revealed that there are still inadequacies in empirical, theoretical, and analytical methodological techniques employed for the investigation of gamified interaction features in Language learning apps and their effects, particularly in India, a developing country. Despite the appropriateness of various frameworks, for example *Self-Determination Theory* (Ryan & Deci, 2000) / *Flow Theory* (Csikszentmihalyi, 1990), reviews brought to the fore the lack of a theoretical foundation for explaining gamification effects; conspicuously, limited studies are grounded on sound theoretic backgrounds (Sailer et al., 2017). There is also no substantiation of the efficiency of gamified interaction features on brand engagement/commitment. Furthermore, recent literature evaluations have demonstrated an absence of appreciation of the effects of innumerable gamified interaction characteristics, as many researchers regard gamification as one notion or a one-dimensional construct (Sailer et al., 2017).

The researcher identified a research gap as the relations between the gamification interaction elements (achievement, absorption, and social) in Language learning apps, brand engagement, and brand-consumer relationship parameters, namely trust, commitment, and satisfaction had not been investigated by prior studies. The current study targets to fill the identified gap in the extant literature and contributes to the extant studies in the fields of language learning, behavioral sciences, marketing, and gamification by scrutinizing the relations between gamified interactions in Language learning apps, engagement, and the brand-consumer relationship, as well as offers practical insights for the use of gamified interactions as well as Language learning.

Founded on *Self-Determination Theory*, the study investigates the influence of diverse

gamified interaction features included in Language learning apps and their relationship with brand relation quality parameters, namely consumers' trust, commitment, and satisfaction. Rarely have studies looked at the associations between gamified interaction and brand features, gamification being in a new arena of marketing (Yang et al., 2017). Although prior studies have investigated some gamified features in Language learning apps, namely their being easy/free to utilize (Marques-Schafer & da Silva Orlando, 2018), being motivating (Huynh et al., 2018), and being flexible (Loewen et al., 2019), no in-depth study has investigated the effect of gamified interactions on users as consumers and investigated their influence on brand-engagement and relationship quality. More crucially, the most evident shortcoming in this corpus of research is that most studies do not examine consumer interactions with gamification features, instead assume that consumers have encountered gamified elements (Berger et al., 2017). As a result, such studies frequently resort to analyzing intentions to continue utilizing the gamified approach on a more general level. Several researchers confirmed the nuances of gamified interactions on brand promotion (Spais et al., 2022), brand equity (Xi & Hamari, 2020), brand engagement (Lu & Ho, 2020), and brand love (Hsu & Chen, 2018), and brand attitude (Yang et al., 2017). Nonetheless, empirical evidence of the impacts of gamified interaction features on brand engagement and relationship quality parameters, particularly for language learning apps, is still lacking. As such, the study aims to address the following research questions:

Do diverse forms of gamified interactions facilitate brand engagement?

Does brand engagement influence brand-consumer relationship quality parameters in the context of a Language learning app?

Does brand trust/commitment influence brand satisfaction among Language learning app users?

The ensuing is the structure of the paper: The theoretical framework and conceptual model are presented in the next section. The third section details the methodology and approach utilized to carry out this study. The findings are given in section four. Section five provides

the discussion of findings along with theoretical, managerial, and research implications; the conclusion is given in the last section.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Gamified interaction features in Language learning Apps

Gamification for Language learning is still a relatively new field (Dehganzadeh & Dehganzadeh, 2020). The gamified interaction elements constitute a design aimed at providing pleasurable game-like experiences for facilitating language learning, which has been equated with a social learning experience (Lantolf et al., 2015). The core idea of gamification is utilizing game-like elements in the non-gaming milieu (Seaborn & Fels, 2015), to connect the attraction of games and enhance motivation. As Language learning may be perplexing, demanding, and stressful (Iaremenko, 2017), especially during the post-pandemic scenario (Sharma & Alvi, 2021), it requires adequate motivation; else the learners may quit easily (Turan & Akdag-Cimen, 2019). Gamification increases their motivation and builds up language proficiency and self-reliance for learners (Castañeda & Cho, 2016). This has resulted in an upsurge in the utilization and implementation of gamified interaction features for learning languages. Fast industrial and technological progress has also boosted the use of gamified features for language acquisition.

Researchers have confirmed Gamified Language learning interactions facilitate the acquisition of skills e.g. listening skills (Bustillo et al., 2017), vocabulary skills (Ajisoko, 2020), and overall communication skills, by making learning an adventure (Zhou et al., 2017). These interactive features fall into three categories: achievement interaction, social interaction, and absorption interaction features (Koivisto & Hamari, 2019).

Achievement interaction-associated features are utilized very often in Language learning apps; these include points, badges, leader boards, coins, and bars indicating progress/levels of difficulty (Koivisto & Hamari, 2019). These interactions have been confirmed to influence the consumers and facilitate feedback (Hassan et al., 2019). This consequently affects the consumer intention for the continuance of the

particular brand, and brand engagement. They also influence the need for relatedness, autonomy, and competence (Xi & Hamari, 2019) by delivering constructive criticism, particularly for language learning by increasing the level of difficulty of tasks and challenges (van Roy & Zaman, 2019). Consumers prefer to feel greater liberty while operating the apps for language acquisition, thus components like progress blocks and difficulty levels provide them a sense of self-sufficiency. The desire for achievement is closely associated with the dares and competence acquired when performing a task (Ryan et al., 2006). The consumers feel a sense of competence as they move from one level to another using the Language apps and receive feedback. This evokes a feeling of autonomy as they feel they have acquired the requisite language efficiency. They can compare their performance with their peers and friends, which further strengthens their feeling of accomplishment. Finally, components like rankings foster a sense of connectedness with others by allowing them to relate with others. As such, it was hypothesized that

H1. Users' interactions with gamified Achievement-associated features in Language learning apps have an affirmative effect on brand engagement.

Absorption-associated interaction features appeal to the users' desires to escape from the tangible factual mundaneness to new simulated dreamlike locations, through role-play and game narratives (Ryan et al., 2006) used in Language learning apps. Most apps use narratives or storylines, each linked with an activity or task. Users complete each task and move on, which fosters their competence. The apps also provide a personalized experience that adds to the competence experienced by the consumers, giving them the choice to select the level or course of learning the language. These features comprise narratives, avatars, narratives, etc. (Koivisto & Hamari, 2019). In short, the gamified interactions impact satisfaction by fulfilling the consumers' psychological needs (Xi & Hamari, 2019). However, their effect on brand engagement is still unclear. Consequently, it was hypothesized that:

H2. Users' interactions with gamified Absorption-associated features in Language learning apps have an affirmative effect on brand engagement.

Social-associated interaction features comprise all those interactions which call for competing, cooperating, and networking with others (Koivisto & Hamari, 2019). Research indicates social features inculcate a sense of belonging and relatedness among consumers (Sailer et al., 2017). Prior research has found that these features impact the need for relatedness while competition emboldens characters to strive towards a single motive (van Roy & Zaman, 2019), teamwork boosts the desire to toil collectively for acquiring the main objectives (Sailer et al., 2017), and interactivity permits the consumers to stay connected. The inclusion of such features in Language learning apps assists the consumers in interacting and sharing details with others, which fosters a feeling of belonging and relatedness among them. They enhance the desire to improve language skills and knowledge. They also help in enhancing the consumers' communication skills which help in building social relations. Thus, it was assumed that:

H3. Users' interactions with gamified Social-associated features in Language learning apps have an affirmative effect on brand engagement.

2.2 Gamification interactions and brand engagement

Research has established gamified interactions affirmatively influence brand attachment (Yang et al., 2022), brand experience (Merdiaty & Aldrin, 2022), brand love (Hsu & Chen, 2018), brand responses (Lee & Ho., 2022), brand association (Nobre & Ferreira, 2017), brand equity (Kushwaha et al., 2020) and brand attitude (Yang et al., 2017). Despite extensive research on brand association with brand connection (Arya, et al., 2018, 2019, 2021), a thorough investigation of the influence of gamification interactions on the brand-consumer relationship is limited (Koivisto & Hamari, 2019), especially regarding Language learning apps. Additionally, there is a lack of substantiation on the efficiency of gamified interaction on brand engagement and brand relationship, which are the main constructs for assessing the *métier* and worth of the Language learning app brands.

Extant literature has confirmed that the brand interactions cause an experiential state termed 'brand engagement' (Calder et al., 2009). Brand engagement can be defined as a notion that may be advanced from a variety of perspectives that capture and explain the nature of interaction that consumers display towards Language learning apps; these may be extended to investigate marketing engagements by persuading intended outcomes (e.g., brand commitment to Language learning apps) or dissuading from unintended actions (e.g., switching from one Language learning brands/apps to another). App brands build standards of trust and reciprocity, creating prospects for involvement by helping consumers to remain associated with the brand and expanding their cognizance of brands (Gil de Zúñiga et al., 2012). This engagement has been considered a one/multi-dimensional (Shen et al., 2019; Verhoef et al., 2010) construct. It encompasses emotion (or affect), cognition, and social behavior. Brand engagement may be used as a strategy to build a relationship between Language learning app brands and users. It may be considered a significant element in the brand-consumer relationship. Consumers with greater involvement with the brand stay more satisfied with the brand (Weiger et al., 2017). Additionally, when they actively connect with a brand, they are more likely to promote it to others and are more likely to purchase it (Hutter et al., 2013) or to buy premium plans offered by the Language learning app. Engagement satisfies and fulfills the sense of belonging (Agarwal & Mewafarosh, 2021). Based on the literature review, it was hypothesized that brand engagement will be associated with brand-consumer relation parameters in the context of Language learning apps.

H4A: Users' perception of Brand engagement has an affirmative effect on Commitment in brand-consumer relations.

H4B: Users' perception of Brand engagement has an affirmative effect on Trust in brand-consumer relations.

H4C: Users' perception of Brand engagement has an affirmative effect on Satisfaction in brand-consumer relations.

2.3 Brand-consumer relationship parameters

For a better comprehension of the brand-consumer association in the context of Language learning apps, relationship parameters were measured for understanding the relationship quality (Ferro et al., 2016; Habeeb et al., 2021). Brand relationship, also termed a consumer-brand relationship, refers to the associations/relations consumers feel, think, and maintain with a brand/product (Veloutsou, 2007). The essential constructs for managing brands are commitment, trust, and satisfaction (Jiang et al., 2016; Jain et al., 2021; Jhamb et al., 2021), with commitment and trust being important for satisfaction. Language learning apps users' commitment and trust are prerequisites for brand-consumer satisfaction. Preparedness to accommodate the demands of consumers in building and sustaining relations over a longer length of time is essential for marketing and relational outcomes (Lui et al., 2009). Trust and commitment are crucial components in creating relationships (Morgan & Hunt 1994). In the brand-consumer connection, trust is critical (Dwyer et al., 1987), and is described as a desire for depending on a partner in whom he can confide (Moorman et al. 1992). When partners in a relationship trust one other, they commit to each other (Chou & Chen, 2018). Commitment can be understood in contradiction with susceptibility (Morgan & Hunt 1994); consumers instead prefer reliability. It acts as a barometer to check the faithfulness (Miglani, 2018) of others. According to previous research, trust is a prerequisite for commitment (Chou & Chen, 2018). Huang (2017) discovered brand love and trust elicited sensory, cognitive, and behavioral responses, and resulted in brand commitment. In short, trust is important for commitment in the case of Language learning apps:

H5A. Users' perception of Trust has an affirmative effect on commitment in brand-consumer relations.

Satisfaction of the consumers with the usage of gamified interaction features in Language learning apps may be considered as an essential component of the brand-consumer connection. It denotes an effective condition of the outcome after comparing the relationship and expected performances (Wilson, 1995), based on actual evidence (Huntley, 2006). Skarmeas et al. (2008) contend that establishing strong relations without trust and

commitment is impossible. Trust is based on confidence in the apps' reliability and trustworthiness. Trust is needed (Gong et al., 2022) as it serves a behavioral purpose concerning assurance for the relationship (Moorman et al. 1993). Therefore, trust based on the fulfillment of all user aspirations with the gamified interaction features in learning apps is important:

H5B: Users' perception of Trust has an affirmative effect on satisfaction in brand-consumer relations.

Performance assessment encompasses the aspects of relations, which include tangible/intangible aspects of relations (Parsons, 2002). Tangible/intangible performances take into account the quality of relations based on not only trust, but also commitment. Commitment is fundamental for maintaining relationships (Morgan & Hunt, 1994). Commitment denotes a longing to maintain relations between the users and the app brands. The current study framed the following hypothesis:

H6: Users' perception of Commitment has an affirmative effect on satisfaction in brand-consumer relations.

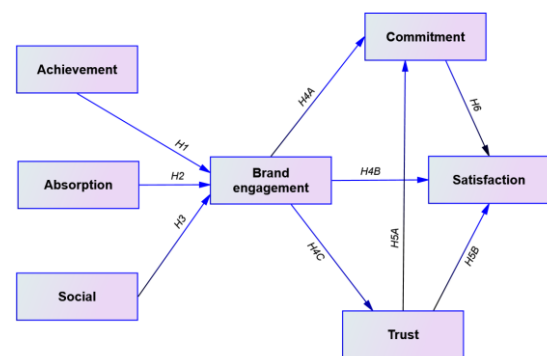


Figure 1. Conceptual model and hypothesis
Source Author's Own- based on extant literature

As demonstrated in Figure 1, the present study develops a conceptual model of how gamified-interaction features in Language learning apps affect brand engagement and consumer-brand relationship parameters. It consists of three main components, Gamified interaction features comprising Achievement, Absorption, and Social interactions, Brand engagement, and Brand-consumer

relationship parameters comprising Trust, Commitment, and Satisfaction with the hypothesized paths.

3. METHOD

3.1 Data collection and Instrument Development

To scrutinize the relations between the select factors and to test the proposed conceptual model, an e-questionnaire was used for the collection of data. Data was collected in March 2022, using Convenience Sampling Technique (Rashid et al., 2022; Sharma et al., 2021). There were seven constructs in this study. All were based on extant studies and were quantified on a Likert scale (from 1=strongly disagree, to 5=strongly agree). The gamified interactions were considered as independent variables and were measured using three items each, except achievement, which was measured using four items; all items were modified and adapted from prior studies (Xi & Hamari, 2020). Furthermore, brand engagement was measured using three items adopted and modified from prior studies (So et al., 2014; Vivek, 2009; Vivek et al., 2014). For commitment, trust, and satisfaction a three-item scale was used for each, founded on earlier works by Mysen et al. (2011), Poppo et al. (2008), and Andaleeb (1996), respectively.

3.2 Sample size and participants

The population of the study included respondents who had been using Language learning apps for Language acquisition. Prospective respondents should have experience using Language learning apps to participate in the study. As such, the users studying at one institute were chosen; they had been using the apps for Language learning for at least two months. The sample consisted of 152 respondents; the response rate was 95%. Allowing for 10-time guideline for sample size, which states that the size of the sample must be ten times the number of inward paths of the construct with the utmost inward paths (Hair et al., 2017), the present sample size was considered adequate. Moreover, G*power 3.1.9 software was also used to check the sample size adequacy (Faul et al., 2007; Sharma et al., 2021, 2022a, 2022b). Dattalo's (2008) proposed settings were utilized ($\alpha=0.05$, $\beta=0.95$, and effect size $f^2=0.15$). The minimal sample size for the investigation was 146 when the error probability is 0.05 and the confidence level is 95 percent. The results also suggest that the

sample size of 152 is sufficient for the present study.

Among the respondents, twenty-five percent were female and seventy-five were male. Thirty-four percent came from rural family backgrounds, whereas sixty-six percent came from urban family backgrounds. Twenty-one percent came from Hindi-medium schools, while seventy-nine percent came from English-medium schools. The average age was 18 years old, ranging from 16 to 20 years. The users had set their preferred language to English, and attempted preliminary tests that checked their prior language skills before they commenced with further levels. They learned English as the second language; they progressed on, earning points /badges /bonuses, and continued using the apps, completing lessons/tasks per day (Achievement), getting rewards on challenge completion (competition) (Nah et al., 2013), and interacting using networking (social), with peers/friends and accomplished tasks and competed with each other with immersion (absorption). Moreover, there were no restrictions/compulsions, as the respondents were free to make their own decisions and switch brands/ apps, since if the apps are made compulsory/ used under pressure, the predictions made would not hold.

3.3 Common method bias CMB evaluations

The current study used a quantitative approach, based on data collected using a single survey of self-reported metrics. To overcome CMB, statistical and procedural approaches were applied (Podsakoff et al., 2003). In terms of procedures, individual involvement was deliberate, and the author assured the respondents' privacy and discretion to minimize the likelihood of dishonest or insincere responses (Podsakoff et al. 2003). Furthermore, the in/dependent constructs were presented in distinct sections in the e-survey form, making it impossible for respondents to draw cause-effect links between the constructs. Second, a comprehensive variance inflation factors (VIFs) based collinearity test was conducted as part of the statistical process. This test stipulates that a VIF score above 3.3 (Kock, 2015) indicates the existence of common method bias. The VIFs ranged from 1.355 to 2.264. As a result, there was no evidence to show the presence of CMB.

4. DATA ANALYSIS

Data were subjected to a test of multivariate normality with the free WebPower online software. Outcomes displayed that the distribution was not normally distributed as specified by Mardia's multivariate kurtosis ($\beta = 104.96$, $p < 0.001$) and skewness ($\beta = 15.45$, $p < 0.001$); as such, it was considered the sample does not come from a normal distribution. The partial least square (PLS) SEM utilizing SmartPLS 3.2.9 application (Ringle et al., 2015) was used since it is a suitable approach due to the lack of multivariate normality. Moreover, the model was complicated and comprised multiple indicators and variables; as the sample size was also below 250, PLS was considered an apt approach in comparison to others, e.g. covariance-based SEM (Hair et al., 2011).

4.1 Measurement Model Assessment

The model's reliability and validity were evaluated. The reliability was assessed using item reliability with factor loadings above 0.6. Four items, one each from Competition, Trust, Commitment, and Satisfaction was omitted due to poor loadings. The loadings for each item were statistically meaningful at 0.01 indicating good item dependability. However, based on measurement model results, four items were omitted from further study, due to poor item loadings. Furthermore, all of the constructs were logically coherent, as measured by composite reliabilities (CR) which was 0.7 or above (Nunnally & Bernstein, 1994) as indicated in Table 1. The validity test was conducted and each factor was observed for average variance extracted (AVE), which was found to be higher than 0.5 (Fornell & Larcker, 1981). The Stone-

Table 1 Measurement model assessment

Constructs	Items	Loadings	VIF	rho_A	CR	AVE	R ²	R ² Adj	Q ²
Achievement	A1	0.792	1.495	0.843	0.841	0.571			
	A2	0.741	2.230						
	A3	0.781	1.985						
	A4	0.704	2.264						
Absorption	ABP1	0.692	1.398	0.792	0.789	0.556			
	ABP2	0.750	2.049						
	ABP3	0.791	1.923						
Social interaction	SI1	0.637	1.355	0.703	0.700	0.527			
	SI2	0.806	1.355						
Brand engagement	BE1	0.840	2.088	0.868	0.867	0.620	0.626	0.619	0.326
	BE2	0.769	1.971						
	BE3	0.760	2.191						
	BE4	0.778	2.038						
Trust	T1	0.803	2.014	0.835	0.832	0.713	0.169	0.163	0.095
	T2	0.883	2.014						
Commitment	C1	0.889	1.803	0.816	0.806	0.677	0.539	0.533	0.304
	C2	0.751	1.803						
Satisfaction	SAT2	0.703	1.500	0.744	0.737	0.584	0.648	0.643	0.335
	SATI	0.822	1.500						

Source: Author's Calculation

Table 2 Discriminant validity analysis

	Achievement	Brand engagement	Commitment	Absorption	Satisfaction	Social interaction	Trust
Achievement	0.755						
Brand engagement	0.684	0.787					
Commitment	0.531	0.435	0.823				
Absorption	0.565	0.709	0.523	0.745			
Satisfaction	0.740	0.542	0.771	0.492	0.770		
Social interaction	0.438	0.591	0.578	0.762	0.505	0.726	
Trust	0.671	0.411	0.718	0.520	0.659	0.731	0.844

Source: Author's Calculation

Geisser test was used to determine the model's predictive significance. The findings revealed, in particular, that the Q² estimation for the DV was affirmative. Standardized Root Mean Square Residual (SRMR), demarcated as the variance in the implied and observed correlation matrix, was used for testing model fit. The estimation was below 0.08 (Hu & Bentler, 1999) i.e. 0.047, which was considered adequate (Henseler et al., 2014). Normed Fit Index (NFI)/ Bentler and Bonett Index closer to 1 represent better results. The findings indicated NFI=0.876, which was considered an acceptable fit.

The AVE square root of constructs was more than the correlations between the construct items (Fornell & Larcker, 1981) as displayed in Table 2 in bold fonts. The HTMT ratio has to be less than 0.9 for data to be valid. The highest HTMT value was 0.780; all values were below 0.9 and were within the prescribed limit for confirming discriminant validity. The results for the HTMT ratio are shown in Table 3.

Table 3 HTMT ratio

	Achievement	Brand engagement	Commitment	Absorption	Satisfaction	Social interaction	Trust
Achievement							
Brand engagement	0.681						
Commitment	0.529	0.435					
Absorption	0.562	0.710	0.526				
Satisfaction	0.759	0.544	0.780	0.498			
Social interaction	0.444	0.596	0.578	0.771	0.501		
Trust	0.671	0.410	0.722	0.521	0.672	0.738	----

Source: Author's Calculation

4.2 Structural Model Assessment

The model explained 61.9 percent of the variance in brand engagement, 53.3 percent of the variation in Commitment, and 16.3 percent of the variation in Trust. Lastly, it showed a 64.3 percent variation in brand satisfaction. The formulated hypotheses were examined using standardized path coefficients, which were computed using the bootstrapping approach with 500 re-samplings. Finally, four control factors are included in the study, coded as dummy variables (0, 1) for controlling Endogeneity, which may render the results inconclusive. These included gender (male/female), age (below/above 18),

domicile (rural/urban), and medium of education (Hindi/English). Recent scholars have recommended this control-variable technique (Hult et al. 2018).

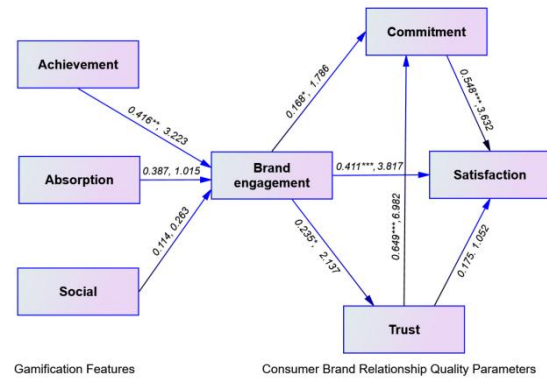


Figure 2. Research model showing β and t values (Significance level $* < .05$, $** = .001$, $*** < .000$)

Source author's own, based on Calculations

The findings showed that interacting with gamified achievement-associated interactions in Language learning apps influenced brand

engagement positively and significantly ($\beta=0.416$, $t=3.223$), confirming H1. Gamified Absorption-associated interactions had a minor positive but negligible influence on brand engagement ($\beta=0.387$; $t=1.015$); gamified social-associated interactions had no significant influence on brand engagement ($\beta=0.114$, $t=0.263$). Thus, H2 and H3 were rejected, respectively. When employing the language learning apps, the results showed that brand engagement exerted an affirmative substantial effect on brand trust ($\beta=0.411$; $t=3.817$), brand commitment ($\beta=0.168$; $t=1.786$), and brand satisfaction ($\beta=0.235$; $t=2.137$). As a result, H4B, and H4C were validated; H4A was

partially validated at $p=0.05$. Furthermore, brand trust was found to have a strong substantial affirmative effect on commitment ($\beta=0.649$, $t=6.982$), based on which H5A was validated; brand trust had no substantial influence on satisfaction ($\beta=0.175$, $t=1.052$), leading to the rejection of H5B. Finally, the brand commitment had an affirmative effect on brand satisfaction ($\beta=0.548$, $t=3.632$), which supported the validity of H6 (Table 4, Figure 2).

relationship based on extant literature. To fill the research gap identified, due to the paucity of empirical data on how gamified interactions boosted brand engagement and the quality of the relationship between consumers and brands, the current study focused on three categories of gamified interaction features: achievement, absorption, and social interaction in the context of Language learning apps. The study found that gamified interactions facilitated brand engagement, thereby satisfactorily answering the first

Table 4 Hypotheses Testing

Hypotheses	β	STD	T	P	CI LL	CI HL	Results
H1: Achievement -> Brand engagement	0.416	0.129	3.223	0.001	0.129	0.619	Accepted
H2: Absorption-> Brand engagement	0.387	0.381	1.015	0.311	-0.878	0.907	Rejected
H3: Social -> Brand engagement	0.114	0.433	0.263	0.793	-0.695	1.004	Rejected
H4A :Brand engagement -> Commitment	0.168	0.094	1.786	0.050	0.008	0.373	Partially Accepted
H4B :Brand engagement -> Trust	0.411	0.108	3.817	0.000	0.189	0.607	Accepted
H4C :Brand engagement -> Satisfaction	0.235	0.110	2.137	0.033	0.023	0.446	Accepted
H5A: Trust -> Commitment	0.649	0.093	6.982	0.000	0.471	0.845	Accepted
H5B: Trust -> Satisfaction	0.175	0.166	1.052	0.293	-0.148	0.470	Rejected
H6: Commitment -> Satisfaction	0.548	0.151	3.632	0.000	0.258	0.817	Accepted

CI LL- confidence level low level=2.50%, CI HL-confidence level high level=97.50%

Source: Author's Calculation

Next, the four control variables were included, and bootstrapping was done again, to find if the control variables exerted any effect on the results to check for Endogeneity issues, which can be mitigated by using control variables (Papies et al., 2016). The results upon the inclusion of the control variables revealed that none of them had a significant effect on the dependent variable Satisfaction. Even though the method may assist in addressing the problem of Endogeneity (Papies et al., 2016) in the model, the researcher recognizes the concerns are not likely to have been circumvented, even in the presence of control variables. Hence, the issue may be viewed as a limitation of the present study.

5. DISCUSSION

The present study developed a model grounded on Self-Determination Theory for investigating the influence of users' interaction with achievement, absorption, and social interaction gamification features in the Language learning apps and their perceptions of brand engagement and brand consumer

research question formulated. However, the outcomes of the study demonstrated that only gamified achievement interactions significantly facilitated brand engagement, as such hypothesis H1 was validated. In terms of achievement features, these were more important in the eyes of consumers, as they provided a sense of accomplishment at having learned the language, such as having points/coins/insignia. Becoming a member team/group, as well as competing/ cooperating with networks through app features like messaging/ chat-box, etc. provided the consumers a feeling of belonging to each other, but it seems the same did not apply to their sense of belonging to the brand community. All gamification features were positively linked to engagement; however, the results indicate the in the case of absorption gamified interaction the effect was positive was not strong on brand engagement as such hypothesis H2 was rejected.

One possible explanation for the discrepancy between the present results and previous

studies is that features like personalizing/ profiling/ making virtual identity/ avatars present a social experience by allowing consumers to display information about themselves to others, which can make it easier for them to provide details about themselves/ the brand rather than help and assist them in learning a language. If the app solely provides gamified absorption-associated interactions, it will not draw the attention of consumers who might want to utilize it for language acquisition. Furthermore, getting medals/ badges can instill a sense of competence in users, since they start believing they have acquired the necessary abilities to attain their objectives. Consumers prefer to feel greater freedom while operating the apps, thus components like progress blocks and difficulty levels may provide them a sense of self-sufficiency. Finally, components like rankings may foster a sense of connectedness with others by allowing them to relate to others. The findings are consistent with prior research in education using the online brand (van Roy & Zaman, 2019), which established gamified achievement elements helped consumers feel proficient as well as independent.

The influence of gamified social-related interaction features (for instance, competitiveness, networking, and collaboration) was favorable but not statistically significant due to which hypothesis H3 was rejected. Prior research has found that the social elements have an impact on the satisfaction of the need for relatedness while teamwork boosts the desire to toil collectively for acquiring the main objectives (Sailer et al., 2017), and competition emboldens characters to strive toward a single motive (van Roy & Zaman, 2019), and interacting permits the consumers to stay connected. These current finding extends previous investigations on interactivity (Hanaysha et al., 2021), which specifies consumers play an active part while interacting with the situation/ environment (van Noort et al. 2012).

With regards to research question 2, brand engagement was found to be associated with consumer brand relation quality parameters, trust, commitment, and satisfaction. All three hypotheses, H4A, H4B and H4C were validated. Brand commitment showed a positive significant association with trust,

while brand satisfaction had a positive significant association with commitment. Thus, the study confirms numerous prior brand-consumer relationship studies on engagement, trust, satisfaction, and commitment. The present study demonstrated the constructive influence of brand engagement with the Language learning apps was desirable for brand consumer relationships, and consequently, marketing outcomes. It implies that the consumers who developed trust, and commitment using the gamified learning app may endorse it to others, have constructive things to say about it to others, and use it in the future.

The third research question sought to gauge the influence of brand trust and commitment on brand satisfaction among Language learning app users. The findings affirmed trust influences commitment as perceived by the users of Language learning apps based on which Hypothesis H5A was validated but the influence of trust on satisfaction though positive was not statistically significant. As such, hypothesis H5B was rejected. The results confirmed that trust is an important factor in commitment, endorsing prior studies which found that commitment is 'the basis of the consumer-brand relationships' (Chaudhuri & Holbrook, 2001; sethi et al., 2021). The findings established that commitment influences brand satisfaction, in the context of Language learning apps, which confirms preceding studies (Farrelly & Quester, 2005). These psychological and emotional elements experienced by the consumers towards the brand were found to be crucial factors in the context of Language learning apps, in India. To sum up, the current study supports prior studies which found that gamified features positively affect user commitment (Huang & Soman, 2013), as well as constructively influence the language learning process.

5.1 Theoretical Contributions

This research complements the body of research in several ways. Firstly, the current study answers to appeals for more studies exploring the influence of gamified interaction on engagement, trust, commitment, and satisfaction, in the context of digital language acquisition grounded on Self-Determination Theory. Furthermore, it builds on prior gamification research by examining how different gamified interactions affect brand

engagement differently. While earlier research, based on theoretical frameworks on gamification is quite uncommon (Sailer et al., 2017), studies that give empirical proof of gamification success in the context of consumer-brand relationships are even scarcer. Thus, the study fills the research gap, by complementing the extant literature on gamified interaction features in Language learning apps.

Recent literature evaluations have demonstrated an absence of appreciation regarding the impact of countless gamified interactions, as researchers have been concentrating more on gamification as a distinct notion (Johnson et al., 2016; Sailer et al., 2017); the investigation examines the impact of three diverse kinds of gamified interactions on brand engagement. Moreover, previous research has mostly focused on examining individuals' behavioral intent rather than brand relationship quality parameters; this study adds to the gamification writings by concentrating on consumer opinions and marketing in the context of Language learning apps.

5.2 Managerial Contribution

The current research offers several practical implications for enhancing the gamification features of Language learning apps and their success in the Indian market. To successfully build and execute such gamified apps, it is essential to comprehend the effect of gamification interaction on the consumers. It is recommended that these applications be created in such a way that they can visually register and record the results/progress of language learning. The app developers may incorporate more enhanced gamified design aspects and interaction features to inspire and motivate consumers. They may also integrate more interactive features into gameplay for language learning. Apps, for example, may provide consumers with a variety of alternative language challenges, as well as award them with various badges based on their achievements. To keep their attention, the challenges may be built with rising difficulty intensities to make them know they are progressing and ensure they are learning. Thus, along with interactivity, Language learning apps may provide an ideal/optimum level of challenge.

To increase brand engagement, app developers should strive for being genuine as it enhances brand engagement and attachment (Arya et al., 2018). They should integrate accomplishment components in the app design, such as rankings, etc. The gamified elements need to be made very interactive and achievement-oriented to generate experiential involvement among consumers, expediting the formation of brand engagement. Consumers should have the ability to compete/collaborate with friends as well as with the brand community at large, to foster a sense of accomplishment. For this, Language learning apps should include diverse challenges requiring collaboration (for instance, a task/challenge may be given in which the consumers can invite others to accomplish a language learning task in a given period) or foster competition (for instance, a task/challenge may be given in which the consumers can invite others to accomplish a language learning task collaboratively). As the challenge perception will depend on the consumers' skill and language proficiency, the language apps should be designed with several levels (from elementary to advanced levels) and have the capacity of aligning challenges/tasks with language skills.

While the current study failed to confirm that absorption/social-related interactions influence engagement, app developers may permit the consumers to engage with these aspects if they want to make them feel competent when using the apps for learning. In conclusion, the findings of this study assist in determining which gamified interaction elements are associated more strongly with brand engagement. As a result, app developers and other entities can focus on the more relevant ones. Furthermore, the crucial implication for brands is that all relationship quality parameters exert an affirmative significant impact on satisfaction; they play a positive role and intensify the brand-relationship quality.

5.3 Future Scope & Limitation

Although the present study has several strengths, it has its limitations too. It examined consumer engagement with language learning apps only, so the findings cannot be extended to other contexts. Future studies may look into additional apps with gamified features. Furthermore, the gamification elements may

be implemented differently across diverse services, and so a study method concentrating on assessing each mechanic separately may result in a loss of external validity. The collected data, as is customary with survey-based studies, comprises self-reported variables, and may be biased. Furthermore, because this study was focused on Indian consumers only, the results can change with cultural contexts or usage purposes. The current study considers brand engagement as a one-dimensional construct (Xu et al., 2017), which may also be seen as a limitation of the current study, as absorption and social interaction features may not significantly influence brand engagement in its totality, but influence only certain aspects of engagement. Future studies may examine the associations between gamified interactions and different aspects of brand engagement; this may better provide a better appreciation of the gamified experience of consumers.

6. CONCLUSION

To summarize, the study investigated the function of gamification in Language learning apps, and evaluated the associations between gamified interaction elements, engagement, and quality metrics of brand-consumer relationship (Trust, Commitment, and Satisfaction). It was found that achievement-related gamified interactions effectively engage and encourage consumers as a creative marketing tactic, as well as stimulate consumer behaviors. Overall, the findings indicate that these gamified interactions have a large impact on consumer brand engagement; moreover, engagement affects trust, commitment, and contentment; and brand commitment has a significant impact on satisfaction. Brand engagement impacts the quality of brand-consumer relationships, based on empirical evidence. In comparison to previous research on brand engagement, the current study conducted a more thorough examination based on actual evidence. This research also successfully demonstrated that brand-consumer relationships may be strengthened through brand engagement for gamified language learning. In short, gamified interactions can be used for enhancing engagement and relationship quality for brand building in Language learning apps in India.

REFERENCES

- Agarwal, S. & Mewafarosh, R. (2021). Linkage of Social Media Engagement with FOMO and Subjective Well Being. *Journal of Content, Community & Communication*, 13(7), 46-57.
- Ajisoko, P. (2020). The use of Duolingo apps to improve English vocabulary learning. *International Journal of Emerging Technologies in Learning*, 15(07), 149-155.
- Andaleeb, S. (1996). An experimental investigation of satisfaction and commitment in marketing channels: the role of trust and dependence. *Journal of Retailing*, 72(1), 77-93.
- Arya, V., Sethi, D., & Paul, J. (2019). Does a digital footprint act as a digital asset? – Enhancing brand experience through remarketing. *International Journal of Information Management*, 49, 142-156.
- Arya, V., Verma, H., Sethi, D., & Agarwal, R. (2018). Brand Authenticity and Brand Attachment: How Online Communities Built on Social Networking Vehicles Moderate the Consumers' Brand Attachment. *IIM Kozhikode Society & Management Review*, 8(2), 87-103.
- Arya, V., Sethi, D., & Paul, J. (2019). Does digital footprint act as a digital asset? – Enhancing brand experience through remarketing. *International Journal of Information Management*, 49, 142-156. <https://doi.org/10.1016/j.ijinfomgt.2019.03.013>
- Arya, V., Sethi, D., & Verma, H. (2018). Are emojis fascinating brand value more than textual language? Mediating role of brand communication to SNS and brand attachment. *Corporate Communications: An International Journal*, 23(4), 648-670. <https://doi.org/10.1108/CCIJ-03-2018-0036>
- Berger, A., Schlager, T., Sprott, D. E., & Herrmann, A. (2017). Gamified interactions: Whether, when, and how games facilitate self-brand connections. *Journal of the Academy of Marketing Science*, 81(2), 1-22.
- Bustillo, J., Rivera, C., Guzmán, J. G., & Acosta, L. R. (2017). Benefits of using a mobile application in learning a foreign

- language. *Sistemasy Telemática*, 15(40), 55–68.
- Calder, B. J., Malthouse, E. C., & Schaedel, E. (2009). Engagement with online media and advertising effectiveness. *Journal of Interactive Marketing*, 23(4), 321–331.
- Castañeda, D. A., & Cho, M. H. (2016). Use of a game-like application on a mobile device to improve accuracy in conjugating Spanish verbs. *Computer Assisted Language Learning*, 29(7), 1195–1204.
- Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, 65(2), 81–93.
- Chou, S. & Chen, C.W. (2018). The influences of relational benefits on repurchase intention in service contexts: the roles of gratitude, trust, and commitment. *Journal of Business & Industrial Marketing*, 33(5), 680–692.
- Csikszentmihalyi, M., Abuhamdeh, S., & Nakamura, J. (2005). Flow. In C. S. Dweck (Ed.), *Handbook of competence and motivation* (pp.598–608). New York: Guilford.
- Dattalo P. (2008). *Determining Sample Size: Balancing Power, Precision, and Practicality*. Oxford university press.
- Dehganzadeh, H., & Dehganzadeh, H. (2020). Investigating effects of digital gamification-based language learning: A systematic review. *Journal of English Language Teaching and Learning*, 12(25), 53–93.
- Dwyer, R., Schurr, P. & Oh, S. (1987). Developing buyerseller relationships. *Journal of Marketing*, 51(2), 11–27.
- Farrelly, F.J. & Quester, P.G. (2005). Examining important relationship quality constructs of the focal sponsorship exchange. *Industrial Marketing Management*, 34(3), 211–219.
- Faul F., Erdfelder E., Lang A.-G., Buchner A. (2007). G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods*, 39, 175–191. 10.3758/BF03193146
- Ferro, C., Padin, C., Svensson, G. & Payan, J. (2016). Trust and commitment as mediators between economic and non-economic satisfaction in manufacturer-supplier relationships. *Journal of Business & Industrial Marketing*, 31(1), 13–23.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Gil de Zúñiga, H., Jung, N., & Valenzuela, S. (2012). Social media use for news and individuals' social capital, civic engagement, and political participation. *Journal of Computer-Mediated Communication*, 17(3), 319–336.
- Gioia, F., Colella, G.M. & Boursier, V. (2022). Evidence on Problematic Online Gaming and Social Anxiety over the Past Ten Years: a Systematic Literature Review. *Current Addiction Reports*, 9, 32–47.
- Gong, J., Said, F., Ting, H. et al. (2022). Do Privacy Stress and Brand Trust still Matter? Implications on Continuous Online Purchasing Intention in China. *Current Psychology*, <https://doi.org/10.1007/s12144-022-02857-x>
- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American Psychologist*, 69(1), 66–78.
- Gupta, P., & Srivastava, R. (2021). Research on Social Enterprises from an Emerging Economy –Systematic Literature Review and Future Research Directions. *Journal of Social Entrepreneurship*, 1–36.
- Habeeb, S., Arya, V., & Ahmad, N. (2021). Home-based entrepreneuring for empowerment and sustainability of Muslim women: a study in the Indian context. *World Review of Science, Technology and Sustainable Development*, 17(4), 334–347.
- Hair, J.F., Jr., Hult, G.T.M., Ringle, C. and Sarstedt, M., 2017. A primer on partial least squares structural equation modelling (PLS-SEM). 2nd ed. Thousand Oaks, CA: SAGE Publications, Inc.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of*

- Marketing Theory and Practice*, 19(2), 139–152.
- Hanaysha, J.R., Sharma, A. & Momani, A.M. (2021). An Exploration of Social Media Marketing Features and Brand Loyalty in the Fast Food Industry. *Journal of Content, Community & Communication*, 14(7), 81-92.
- Hamari, J. & Parvinen, P. (2018). Introduction to gamification minitrack. In *Proceedings of the 51st Hawaii International Conference on System Sciences*, 1106-1107.
- Hassan, L., Dias, A. & Hamari, J. (2019). How motivational feedback increases user's benefits and continued use: a study on gamification, quantified-self and social networking. *International Journal of Information Management*, 46, 151-162
- Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., Ketchen, D. J., Hair, J. F., Hult, G. T. M., & Calantone, R. J. (2014). Common beliefs and reality about partial least squares: comments on Rönkkö & Evermann (2013). *Organizational Research Methods*, 17(2), 182–209.
- Hsu, C. L., & Chen, M. C. (2018). How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love. *Computers in Human Behavior*, 88, 121–133.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: Multidisciplinary Journal*, 6(1), 1–55.
- Huang, C. C. (2017). The impacts of brand experiences on brand loyalty: Mediators of brand love and trust. *Management Decision*, 55(5), 915–934.
- Huang, W. H. Y., & Soman, D. (2013). Gamification of education. *Report Series: Behavioural Economics in Action*, 1–29
- Hult, G.T.M. Hair, J.F. Proksch, Jr, D. Sarstedt, M. Pinkwart, A. Ringle C.M. (2018). Addressing endogeneity in international marketing applications of partial least squares structural equation modelling, *Journal of International Marketing*, 26 (3) 1-21
- Huntley, J.K. (2006). Conceptualization and measurement of relationship quality: linking relationship quality to actual sales and recommendation intention. *Industrial Marketing Management*, 35(6), 703-714
- Hutter, K., Hautz, J., Dennhardt, S., & Füller, J. (2013). The impact of user interactions in social media on brand awareness and purchase intention: The case of MINI on Facebook. *Journal of Product & Brand Management*, 22(5/6), 342–351.
- Huynh, D., Zuo, L., & Iida, H. (2018). An assessment of game elements in language-learning platform Duolingo. In 2018 4th International Conference on Computer and Information Sciences (ICCOINS) (pp. 1–4). doi:10.1109/ICCOINS.2018.8510568
- Iaremenco, N. (2017). Enhancing English language learners' motivation through online games. *Information Technologies and Learning Tools*, 59(3), 126–133.
- Jain, V. K., Arya, V., & Sharma, P. (2021). Social Media And Sustainable Behavior: A Decision Making Framework Using Interpretive Structural Modeling (ISM), . *Journal of Content Community & Communication*, 14, 1-13.
- Jhamb, D., Kampani, N., & Arya, V. (2021). Embracing the employee orientation: does customer relationship matter in brand building?. *Benchmarking: An International Journal*. 29, 2, 411-433.
- Jiang, Z., Gollan, P. J., & Brooks, G. (2016). Relationships between organizational justice, organizational trust and organizational commitment: a cross-cultural study of China, South Korea and Australia. *The International Journal of Human Resource Management*, 1-32.
- Johnson, D., Deterding, S., Kuhn, K.A., Staneva, A., Stoyanov, S. and Hides, L. (2016). Gamification for health and wellbeing: a systematic review of the literature. *Internet Interventions*, 6, 89-106.
- Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. San Francisco, CA: John Wiley & Sons.

- Kock, N. (2015). Common method bias in PLS-SEM: a full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10.
- Koivisto, J., & Hamari, J. (2019). The rise of motivational information systems: A Review of gamification research. *International Journal of Information Management*, 45, 191-210.
- Kushwaha, B.P., Singh, R.K. & Varghese, N. (2020). Integrating Social Media And Digital Media As New Elements Of Integrated Marketing Communication For Creating Brand Equity. *Journal of Content, Community & Communication*, 11(6), 52-64.
- Lantolf, J., Thorne, S. L., & Poehner, M. (2015). Sociocultural theory and second language development. In B. van Patten & J. Williams (Eds.), *Theories in Second Language Acquisition* (pp. 207-226). New York: Routledge.
- Lee, Y. & Ho., Y. L. (2022). Effects of gamification incorporated in branded apps on brand responses. *International Journal of Mobile Communications*, 20(1) 53 - 72.
- Loewen, S., Crowther, D., Isbell, D. R., Kim, K. M., Maloney, J., Miller, Z. F., & Rawal, H. (2019). Mobile-assisted language learning: A Duolingo case study. *ReCALL*, 31(3), 293-311.
- Lu H-P, Ho H-C. (2020). Exploring the Impact of Gamification on Users' Engagement for Sustainable Development: A Case Study in Brand Applications. *Sustainability*. 12(10):4169.
- Lui, S., Wong, Y. & Liu, W. (2009). Asset specificity roles in inter-firm cooperation: reducing opportunistic behavior or increasing cooperative behavior? *Journal of Business Research*, 62(11), 1214-1219.
- Marques-Schafer, G., & da Silva Orlando, A. A. (2018). Languages learning conceptions and Duolingo: A critical analysis on its proposals and learners experiences. *Texto Livre - Linguageme Tecnologia*, 11(3), 228-251.
- Merdiaty, N. & Aldrin, N. (2022) Effect of Brand Experience on Customer Engagement Through Quality Services of Online Sellers to Students in Bekasi. *Frontiers in Psychology*, 12, 801439.
- Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market research: The dynamics of trust within and between organizations. *Journal of Marketing Research*, 29(3), 314-328.
- Morgan, R. & Hunt, S. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38.
- Mysen, T., Svensson, G. and Payan, J.M. (2011). Causes and outcomes of satisfaction in business relationships. *Marketing Intelligence & Planning*, 29(2), 123-140.
- Nah, F. F. H., Telaprolu, V. R., Rallapalli, S., & Venkata, P. R. (2013, July). Gamification of education using computer games. In *International Conference on Human Interface and the Management of Information*, 99-107. Springer.
- Migliani, N. (2018). Organizational Commitment of North Indian Journalists. *Journal of Content, Community & Communication*, 7(4), 78-85.
- Nobre, H., & Ferreira, A. (2017). Gamification as a platform for brand co-creation experiences. *Journal of Brand Management*, 24(4), 349-361.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric Theory*, 3rd ed., McGraw-Hill, New York, NY.
- Papies, D., Ebbes, P., & van Heerde, H. J (2016). Addressing endogeneity in marketing models. In: Leeflang, P. S. H., Wieringa, J. E., Bijmolt, T. H. A., Pauwels, K. H. (Eds.), *Advanced methods in modeling markets*.
- Parsons, A.L. (2002). What determines buyer-seller relationship quality? An investigation from the buyer's perspective. *The Journal of Supply Chain Management*, 38(2), 4-17.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. & Podsakoff, N.P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.

- Poppo, L., Zhou, K. & Ryu, S. (2008). Alternative origins to inter-organizational trust: an interdependence perspective on the shadow of the past and the shadow of the future. *Organization Science*, 19(1), 39-55.
- Rashid, R. M., Pitafi, A. H., Qureshi, M. A., & Sharma, A. (2022). Role of Social Commerce Constructs and Social Presence as Moderator on Consumers' Buying Intentions During COVID-19. *Frontiers in Psychology*, 13, 772028-772028.
- Ringle, C., Wende, S. & Becker, J. (2015). *SmartPLS 3*, SmartPLS, Boenningstedt.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, 55(1), 68-78.
- Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, 69, 371-380.
- Seaborn, K. & Fels, D. (2015). Gamification in theory and action: a survey. *International Journal of Human-Computer Studies*, 74, 14-31.
- Sethi, D., Pereira, V., & Arya, V. (2021). Effect of Technostress on Academic Productivity: E-Engagement Through Persuasive Communication. *Journal of Global Information Management (JGIM)*, 30(5), 1-19.
- Sharma A, & Alvi, I. (2021). Evaluating pre and post COVID 19 learning: An empirical study of learners' perception in higher education. *Education and Information Technologies*, 26(6), 7015-7032.
- Sharma, A., Dwivedi, Y. K., Arya, V., & Siddiqui, M. Q. (2021). Does SMS advertising still have relevance to increase consumer purchase intention? A hybrid PLS-SEM-neural network modelling approach. *Computers in Human Behavior*, 124, 106919.
- Sharma, A., Fadahunsi, A., Abbas, H. and Pathak, V.K. (2022a), "A multi-analytic approach to predict social media marketing influence on consumer purchase intention", *Journal of Indian Business Research*, Vol. 14, No. 2, pp. 125-149. <https://doi.org/10.1108/JIBR-08-2021-0313>
- Sharma, A., Dwivedi, R., Mariani, M. M., & Islam, T. (2022b). Investigating the effect of advertising irritation on digital advertising effectiveness: A moderated mediation model. *Technological Forecasting and Social Change*, 180, 121731.
- Shen, J., X. Ma, X. Gao, L. Bierlien Palmer, S. Poppink, W. Burt, ... P. Reeves. (2019). Developing and Validating an Instrument Measuring School Leadership. *Educational Studies*, 45(4), 1-20.
- Skarmeas, D., Katsikeas, C., Spyropoulou, S. and Salehi-Sangari, E. (2008). Market and supplier characteristics driving distributor relationship quality in international marketing channels of industrial products. *Industrial Marketing Management*, 37(1), 23-36.
- So, K. K. F., King, C., & Sparks, B. (2014). Customer engagement with tourism brands: Scale development and validation. *Journal of Hospitality & Tourism Research*, 38(3), 304-329.
- Spais, G., Behl, A., Jain, K., et al. (2022). Promotion and Branding from the Lens of Gamification in Challenging Times. *Journal of Promotion Management*, 28(4), 413-419.
- Turan, Z., & Akdag-Cimen, B. (2019). Flipped classroom in English language teaching: A systematic review. *Computer Assisted Language Learning*, 33(5-6), 590-606.
- van Noort, G., Voorveld, H. A. M., & van Reijmersdal, E. A. (2012). Interactivity in brand web sites: Cognitive, affective, and behavioral responses explained by consumers' online flow experience. *Journal of Interactive Marketing*, 26(4), 223-234.
- 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.

- Veloutsou C. (2007). Identifying the Dimensions of the Product-Brand and Consumer Relationship. *Journal of Marketing Management*, 23 (1/2), 7-26.
- Verhoef, Peter C., Reinartz, Werner J. , & Krafft, Manfred (2010). Customer Engagement as a New Perspective in Customer Management. *Journal of Service Research*, 13 (3), 247-52.
- Vivek, S. D. (2009). *A scale of consumer engagement*. Tuscaloosa: The University of Alabama.
- 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.
- Weiger, W. H., Wetzels, H. A., & Hammerschmidt, M. (2017). Leveraging marketer-generated appeals in online brand communities. *Journal of Service Management*, 28(1), 133-156.
- Wilson, D.T. (1995). An integrated model of buyer-seller relationships. *Journal of the Academy of Marketing Science*, 23(4), 335-345.
- Wunderlich, N. V., Gustafsson, A., Hamari, J., Parvonen, P., & Haff, A. (2019). The great game of business: Advancing knowledge on gamification in business contexts. *Journal of Business Research*, 106, 273-276.
- 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.
- Xu, F., Buhalis, D., & Weber, J. (2017). Serious games and the gamification of tourism. *Tourism Management*, 60, 244-256.
- Yang, C., Yang, P. & Feng, Y. (2022). Effect of achievement-related gamification on brand attachment. *Industrial Management & Data Systems*, 122(1), 251-271.
- Yang, Y., Asaad, Y., & Dwivedi, Y. (2017). Examining the impact of gamification on intention of engagement and brand attitude in the marketing context. *Computers in Human Behavior*, 73, 459-469.
- Zhou, L., Yu, J., Liao, C., & Shi, Y. (2017). Learning as Adventure: An App Designed with Gamification Elements to Facilitate Language Learning. In: Nah, FH., Tan, CH. (eds) *HCI in Business, Government and Organizations. Interacting with Information Systems. HCIBGO 2017. Lecture Notes in Computer Science*. 10293. Springer, Cham. https://doi.org/10.1007/978-3-319-58481-2_21
