The impact of Gamex on brand loyalty and the intention to use: The mediating role of customer brand engagement

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Abstract:

This study aims to investigate the influence of the gameful experience on customer-related outcomes in the context of branded fitness applications. Specifically, it analyses the mediating role of customer brand engagement (CBE) between the gameful experience, brand loyalty and the intention to use. This research also probes the moderating effect of self-image congruity (SIC) on the previous constructs. A quantitative study with data from 436 users of fitness apps showed that CBE fully mediates the relationship between Gamex and loyalty, whereas it partially mediates the link between Gamex and intention to use. Additionally, the findings show that Gamex has a stronger effect on CBE for the consumers with low SIC while for those with high SIC, it has a stronger impact on their intention to use. The study contributes to the academia by developing a model analysing the direct relations between the gameful experience and behavioural outcomes, mediated by CBE and moderated by SIC.

Keywords: *Gamification, Customer Brand Engagement, Self-image congruity*

Track: *Consumer Behaviour*

1. Introduction:

The sports and fitness industries are some of the fastest growing areas in developing applications to detect, track and analyse the users' physical activity, providing them with an overview of their daily routes, customized trainings and the summary of their performances to keep them physically fit. They represent an emerging field with an increase expected to attend an annual revenue growth rate of 18.50%, projecting a market volume of US$44,594.15m by 2025 (Statista, 2021). In this vein, many sports brands, wanting to stay in the heart of the market, are developing branded applications for their consumers. And more importantly, integrating game elements to these fitness apps to keep their customers engaged (Huotari & Hamari, 2017). Consequently, researchers are also starting to pay more attention to the impact of these gamified fitness and sport apps on customers' engagement ((Jang et al., 2018; Rodrigues et al., 2019)) and behaviours (Feng et al., 2020) . However, previous literature was more focused on measuring the gamification on a mechanics level (Harwood & Garry, 2015), or on a dynamics' level (Xi & Hamari, 2020), or on a benefits' one (Jang et al., 2018), disregarding the emotional factor of this impact. To bridge the gap, Eppmann, Bekk and Klein (2018) operationalized and validated a new gameful experience scale (GAMEX) measuring how the customer feels when interacting with a gamified app. Nonetheless, little is known about how the customers' experience with the app explains the development of brand-related favourable outcomes and behavioural intentions to use the branded app in the future. Specifically, there are no studies that evaluate the simultaneous effect of the gameful experience on brand engagement, brand loyalty and intention to use the branded app. Therefore, our current research seeks to fulfil this gap by presenting and empirically testing a comprehensive model, that aims to i) investigate the relationship between the gameful experience, customer brand engagement, brand loyalty, and behavioural intentions ii) examine the impact of self-image congruity as a moderator on the relationship between Gamex and customer brand engagement iii) explore the moderating effect of self-image congruity on the relationship between Gamex and brand loyalty and Gamex and intention to use. Unlike prior studies, this research will provide a novel integrated model that contributes actively to the current Gamification literature, besides of guidelines to sports' brands for developing a successful gameful experience to their customers.

2. Literature Review and Development of the Hypotheses

2.1. The gameful experience - gamex

Gamification has proven advantageous in creating gameful experiences (Huotari & Hamari, 2017) that led to stimulating the users' interests. It played a crucial role in motivating people to increase their physical activity by 15% compared to exercising alone and in retaining their level of persistency (Chen et al., 2014). Gameful experience is defined as the psychological consequence resulting from using a gamified application (Eppmann et al., 2018), and it has appeared as a new tendency to create customer engagement (Mishra & Malhotra, 2021). Eppmann, Bekk and Klein (2018) developed the gameful experience scale (GAMEX) as a reliable and valid tool for measuring the customer's feelings when engaging with the gamified application. These authors developed the gameful experience as a multidimensional construct, composed of enjoyment, absorption, creative thinking, activation, absence of negative affect and dominance. According to the limited recent research findings, the experience that users have while interacting with a gamified application can have a positive effect on consumers' outcomes. For example, Baptista and Oliveira (2017) have found that gamification helps to perceive more exciting, interesting and enjoyable the mobile services banking, and accordingly, positively affect the customers' behavioural intentions. Al-Zyoud (2021) analysed consumers of gamified eCommerce website and found that the gameful experience elements have a positive influence on the consumer loyalty. Likewise, gamification had a significant effect on the customers' continuous intention to participate in loyalty programs (Hwang & Choi, 2020). Consequently, if gamification has positively influenced eCommerce applications and loyalty programs, it is very likely that it will also have the same effect on running applications. Thus, the following hypotheses are proposed:

H1: Gamex affects brand loyalty directly and positively

H2: Gamex affects the intention to use the app directly and positively

2.2.The mediating role of customer brand engagement

Brand engagement is the cognitive, emotional and behavioral brand-related activity that a consumer experienced through their interactions with the brand (Hollebeek et al., 2014). The construct of customer brand engagement is composed, first, by cognitive processing that refers to the degree of brand-related thoughts processing that a person puts into the interaction with the brand (Hollebeek et al., 2014). Second, affection indicates how positive the person feels about the interaction with the brand (Hollebeek et al., 2014). This dimension is linked to the customers' feelings towards the brand. And third, activation defines the customers' efforts spent on the brand when interacting with it, including their energy and time (Hollebeek et al., 2014). Hollebeek, Juric and Llic (2011) examined

customer brand engagement as the result of the interactive and co-creative customer experience with a focal object, matching the nature of the gameful experience (Huotari & Hamari, 2017). These scholars emphasised the significance of the customer experiences in fostering brand engagement. As a result, it appears plausible that gameful experiences, through gamified branded apps, will be capable of generating customers experiences, leading to brand engagement. To back-up this assertion, previous studies suggest that gamification can increase the level of engagement that a customer feels towards a particular focal brand. For instance, Jang, Kitchen and Kim (2018) probed that gamified customer benefits, in the exercise context, drives higher customer engagement. Additionally, Leclerq, Hammedi and Poncin (2018) found that gamification mechanics, through the creation of positive customer experiences, contribute to boosting and maintaining customer's engagement.

Recent studies accumulate the effect of customer brand engagement first, on brand loyalty; Xi and Hamari (2020) found that brand engagement is positively associated with brand equity that consists of brand loyalty among other variables (Xi & Hamari, 2020). Similarly, the aforementioned studies explored how customer brand engagement impacts positively brand loyalty ((Abou-Shouk & Soliman, 2021; Harrigan et al., 2017)). Therefore, the above findings suggest that customer brand engagement reinforces brand loyalty. And second, on behavioural intentions; Qing and Haiying (2021) confirm the effect of customer brand engagement dimensions on the continuance intention of using branded apps in the future. Another study found that customers with positive attitudes towards banking applications were more likely to engage with app. This led to a positive impact on the customers' intention to use (Muñoz-Leiva et al., 2017). Therefore, the previous findings suggest that customer brand engagement reinforces the intention to use the app in the future. Accordingly, the gameful experience impacts positively customer brand engagement and in turn increases brand loyalty and the future intention to use the branded apps. Therefore, it is expected that CBE mediates the influence of Gamex on brand loyalty and customers' behavioural intentions to keep on using the gamified brand-app. The mediating impact of customer brand engagement on the customer-brand outcomes relationship has been evidenced (Hsu & Chen, 2018). Hence, we suggest the following hypotheses:

H3: Customer brand engagement positively mediates the relationship between the Gamex and brand loyalty

H4: Customer brand engagement positively mediates the relationship between Gamex and intention to use

2.3.The moderating role of self-image congruity:

Self-image congruity is a process by which an individual reflects on source images and matches these to his self-concept (Sirgy et al., 2000). Previous marketing literature has shown that self-image congruity (SIC) is positively associated to loyalty and intention to use and plays a key role in developing the emotional experience that a customer undergoes when shopping, resulting into a higher shopper's satisfaction and therefore a greater level of retention (Han et al., 2019). In addition, the moderating effect of self-image congruity has been conceptually in the marketing literature (Sirgy et al., 2000), and empirically validated. For example, Kleijnen et al. (2005) found this effect between consumption situation and adoption behaviour of wireless services. Kourouthanassis et al. (2015) identified the moderating effect of self-image congruity between satisfaction and the intention to use again a specific social network site. Based on the above, this study argues that the brand engagement, the brand loyalty, and the continuance intention to use the app will increase due to the chances provided by the fitness app to validate their image to others. Therefore, moderating effect hypotheses are developed as follows:

H5: SIC will moderate positively the effect of the Gamex on CBE

H6: SIC will moderate positively the effect of Gamex on brand loyalty

H7: SIC will moderate positively the effect of Gamex on the intention to use
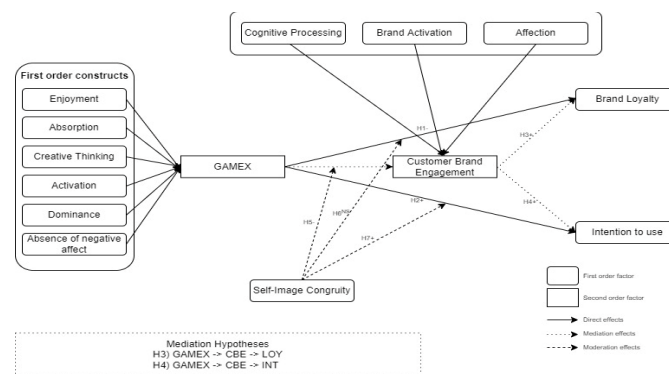

Figure 1: Conceptual framework

3. Research Methods

3.1 Sample and data collection

The data was collected using an online survey, targeting active users of running and fitness branded applications. 436 answers were collected from running forums, Facebook groups, fitness application communities and even physical organized marathons. Most of the respondents (45%) were between 25 and 35 years old, 57% were women. 39% of the users had a monthly income of 27.000 euros, equal to the average annually salary in Spain while

16% were above the average and 22% below the average. The majority of the respondents were using equity Nike Run Club (38%) as the app for their regular physical activity.

3.2 Questionnaire measurement and pilot testing

This study used seven-point Likert scales (from 1= strongly disagree to 7= strongly agree) that were developed based on instruments previously validated by related scholars. Measurement items for the GAMEX variables were adapted from Eppman et al. (2018). Customer brand engagement was measured using the scale developed by Hollebeek et al. (2014) and the four items of Intention to use were adopted from (Chiu & Cho, 2021). Brand loyalty was measured using a scale adapted from previous existent literature () while the items from self-image congruity were adopted from Kourouthanassis et al. (2015).

4. Results

4.1 Measurement model evaluation

This study applied the partial least squares structural equation modelling (PLS-SEM) technique with SmartPLS 3.0 software to test the proposed research model. A full collinearity test based on variance inflation factors (VIF) revealed no indication of common method bias as suggested by values below 3.3 (Kock, 2015). The Cronbach's alpha and composite reliability estimates exceeded the recommended threshold of 0.70. The average variance extracted (AVE) values of the constructs were above the critical threshold of 0.50, therefore, the convergent validity criteria were also met. Results suggest the existence of discriminant validity among the constructs, since the HTMT ratios are below the threshold of 0.85 (Henseler et al., 2015). These results confirm the existence of discriminant validity. For assessing the formative second-order constructs of Gamex and customer brand engagement (CBE), the significance of the outer weights and the collinearity among the indicators were analyzed (Hair, Hult, Ringle, and Sarstedt, 2017). The results showed that the indicators of Gamex and CBE (the first-order formative constructs) were significant, with VIF values below the critical threshold of 5.

4.2 Structural model

4.2.1. Hypothesis testing: direct effects

The hypotheses testing was conducted with a bootstrapping procedure of 8.000 subsamples (Hair et al., 2017). The results revealed that Gamex has an insignificant direct impact on brand loyalty (LOY) ($\beta = 0.053$, $t = 993$, $p>0.1$) contrary to our expectations and

therefore rejecting H1. On the counter part, Gamex does significantly impact INT (β = 0.275, t = 3.859, p<.001) providing empirical support for H2.

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H1: GAMEX -> LOY	0.053	0.054	0.993	**0.160**
H2: GAMEX -> INT	0.275	0.071	3.859	**0.000***

Table 1: Results of the direct effects of the structural model

4.2.2. Hypothesis testing: the mediating role of customer brand engagement

The mediation analysis was performed to estimate the relationship between Gamex and LOY (H3): The results (see Table 2) revealed a mediating role of CBE between Gamex and LOY (H3: β = 0.275; t-value = 5.546). The direct effect of Gamex on LOY was not significant (β = 0.053; t-value = 0.993, p=0.160). Therefore, this result indicates that CBE fully mediates this causal relationship. Whereas the mediation analysis for the relationship between Gamex and INT (H4) revealed a mediating role of CBE between the two constructs (H4: β = 0.056; t-value = 1.985, p= 0.024). The direct effect of Gamex on INT was significant (β = 0.275; t-value = 3.859, p <0.1). Hence, CBE partially mediates the relationship between Gamex and INT. These results lead us to accept both the hypotheses 3 and 4.

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H3: GAMEX -> CBE -> LOY	0.275	0.050	5.546	**0.000***
H4: GAMEX -> CBE -> INT	0.056	0.028	1.985	**0.024***

Table 2: The results of the mediating role of customer brand engagement in the

4.2.3 Hypothesis testing: the moderating role of self-image congruity

For analysing the moderating role of self-image congruity (SIC), we used the interaction approach with two-stages to calculate the moderating effects. Results showed that the interaction of SIC and Gamex on CBE (β = -0,137; t-value = 4.486, p < 0.1) reveals a negative but significant path, whereas the effect of SIC and GAMEX on LOY is not significant (β = 0.024; t-value = 1.033, p > 0.1), while the effect of SIC and Gamex on INT shows a positive and significant path (β = 0.130; t-value = 4.025, p < 0.1). These insights indicate that Gamex has a stronger impact on CBE for the users who are low on SIC and has a strong effect on INT for those who are high on CBE. These leads to the rejection of H5 and H6 and the acceptance of H7.

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H5: SIC*GAMEX -> CBE	-0.137	0.031	4.486	**0.000***

H6: SIC*GAMEX -> LOY	0.024	0.023	1.033	**0.151**
H7: SIC*GAMEX -> INT	0.130	0.032	4.025	**0.000***

Table 3: The results of the moderating effect of self-image congruity

5. Discussion, Conclusion, Limitations and Further Research

This study explores the impact of the gameful experience as a result of using a gamified apps on customers' engagement with the brands and the gamified system as well. It represents one of the first attempts to examine (1) the mediating role of customer brand engagement on the gameful experience, brand loyalty, and the intention to use the branded app; and (2) the moderating influence of self-image congruity in the relationship between Gamex, CBE, brand loyalty and the intention to use. The results indicate that Gamex directly impact the intention of the customers to use the gamified app, specifically those who can relate their thoughts and emotions with the brand image and that CBE partially mediates this relationship, which is consistent with prior literature. However, Gamex, on its own, does not have any effect on brand loyalty which suggests that the use of a gamified branded application doesn't imply necessarily the loyalty of the user to the brand, unless there is an indirect path through a full mediation effect of customer brand engagement. Additionally, people with low self-image congruity tend to interact more with the brand through its delivered gameful experience, which sparks their curiosity on wanting to learn more about the matches between the brand image and their thoughts and beliefs. This finding reinforces the fact that considering emotional factors besides cognitive and social ones in creating a gameful experience play a key role in increasing customers brand engagement, which in turn, will lead these customers to become loyal to the brand to a certain extent and become more willing to use the gamified branded app on a regular basis. Therefore, this research provides contributions to the academia by first, extending the previous findings through investigating the gameful experience as a multidimensional construct, contrary to what have been used before (Vidergor, 2021). Second, by exploring the mediation effects of customer brand engagement on the gameful experience and the different customers behaviours. Although past research suggested a relationship between Gamex and CBE or CBE and brand loyalty or CBE and intention to use ((Al-Zyoud, 2021; Hsu & Chen, 2021; Qing & Haiying, 2021)), there was no research investigating how these 4 constructs function together in a direct and indirect way. Third, by probing the requirements to be satisfied to qualify the relationship between SIC and the rest of the constructs. Previous studies have underlined the importance of self-image congruity in driving engagement within the communities or with the brands ((Han et

al., 2019; Kressmann et al., 2006)), however, as far as we know, researchers had yet to investigate the moderating role of SIC on the relationship between the gameful experience, CBE and the behavioural outcomes. This study also provides managerial implications by offering the industry a comprehensive framework by which brands can build gamified apps, considering the emotional aspects to be able to deliver a successful gamified application. Besides, knowing how user behaviours continually change, it will be interesting to conduct future research using our structural model in different contexts and cultures.

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