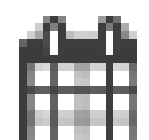# Does gamification effect customer brand engagement and co-creation during pandemic? A moderated-mediation analysis

Raouf Ahmad Rather, Shakir Hussain Parrey, Rafia Gulzar & Shakeel Ul Rehman

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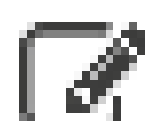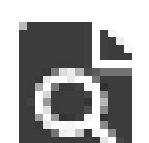
Raouf Ahmad Rather [iD][a], Shakir Hussain Parrey[b], Rafia Gulzar[c] and Shakeel Ul Rehman[b]

[a]Global Scientific Independent Researcher, India; [b]Department of Management Studies, School of Business Studies, Islamic, University of Science and Technology, Awantipora, India; [c]Department of Human Resource, College of Business, Dar Al Uloom University, Riyadh, KSA

ABSTRACT

While insight into gamification, customer brand engagement (CBE), and co-creation is rapidly increasing, little remains known about the relationship of these, and related concepts, as thus investigated in this study. Rooted in service-dominant logic and protection motivation theory-informed perspectives, this study develops and tests a model which investigates the effects of destination brand-based gamification on CBE, co-creation, loyalty and positive word-of-mouth (WOM) during pandemic. This study also investigates the potentially moderating role of protection motivation and psychological fear in affecting these associations. To explore these issues, we collected tourist-based survey data using PLS-SEM analysis. Our findings suggest that gamification positively impacts CBE, co-creation, loyalty and WOM. Second, our findings confirm the CBE's differing effects on co-creation, loyalty and WOM. Third, results revealed the gamification's indirect effect on co-creation, loyalty and WOM, as mediated through CBE. Further, findings verify a reciprocal relationship between loyalty and CBE, which has not been reported in existing studies. Finally, our analyses revealed a significant-positive moderating role of protection motivation and significant-negative moderating effect of psychological fear in proposed associations. This study offers key theoretical and practical implications to marketing literature with valuable suggestions for destination brand managers during pandemic.

1. Introduction

In marketing field, customer brand engagement (CBE) is regarded as an important aspect of brand-based business performance (Kumar & Pansari, 2016), and a lot of attention has been cast on the question of how the customer can be made aware and loyal with brand (Hollebeek et al., 2014; Shawky et al., 2020; Thakur, 2018; Unnava & Aravindakshan, 2021). Over the years, the thinking about this question has evolved from transaction-based perspective to relationship-based marketing perspective and

ultimately to engaging consumers in all possible ways (Pansari & Kumar, 2017). Thus, it is not surprising that brand marketers and marketing practitioners have initiated looking for answers to customer brand engagement obstacles within the domain of gamification (Hamari & Keronen, 2017; Hofacker et al., 2016; Hsu & Chen, 2018). The phenomenon of transforming products/services to be more game-like is known as gamification (Huotari & Hamari, 2017; Xi & Hamari, 2020). Thus, most of brands/firms are captivated to adopt gamification as a tool to promote customers' motivation in engaging with brands (Abou-Shouk & Soliman, 2021; Buhalis et al., 2019). For example, global tourism brands like Expedia, Starbucks and TripAdvisor all include gamified elements in their marketing strategies (Buhalis et al., 2019; Eisingerich et al., 2019), and gamification-market size is likely to increase from USD10.19 million in 2020 to USD 38.42 million by 2026 (Mordor Intelligence, 2020).

Recent literature offers evidence that, gamification has been documented to have positive relationship with brand-based awareness (Abou-Shouk & Soliman, 2021; Xi & Hamari, 2020), attitude (Yang et al., 2017), involvement (Nobre & Ferreira, 2017), engagement (Eisingerich et al., 2019; Harwood & Garry, 2015), experience (Buhalis et al., 2019), love (Hsu & Chen, 2018) and tourism-sustainable community support (Buhalis et al., 2019). As majority studies examines the impact of gamification on overall level or merely by including gamification as research context; a more detailed and granular research into gamification and destination marketing is generally still scant (e.g. Kim et al., 2021; Koivisto & Hamari, 2019; Xu et al., 2017) and specifically during pandemic revealing an important knowledge gap. In particular, most of the research studies have failed to explore how gamification design/features impact different key marketing-outcomes including CBE, brand co-creation (BC), positive word-of-mouth (WOM), and brand loyalty (BL) outside qualitative exploratory analysis (Xi & Hamari, 2020), interview methods (Lucassen & Jansen, 2014), netnography (Harwood & Garry, 2015), or focus-groups (Yang et al., 2017). Thus, there exists a scarcity of confirmation into the role of gamification outside the simple results, which gamification appears to be usually helpful. Notably, CBE, co-creation and loyalty as the core constructs to evaluate the value or (strength) of a brand, which has not been considered as dependent-factors in recent gamification-based research during pandemic. Therefore, a research gap exits into the mechanisms/dynamics of how gamification can develop CBE, BC, positive-WOM, and loyalty during (vs. *pre*)-pandemic.

Although, despite the interest, little remains to be known about the drivers and consequences of gamification-based CBE (Eisingerich et al., 2019; Li et al., 2020; So et al., 2020), specifically during COVID-19 pandemic, which is likely to witness different dynamics (vs. regular market situations; Hollebeek et al., 2021). For instance, while Yang et al. (2017) claim that gamification is useful to produce brand attitude and engagement intention, concerned consumers during the pandemic may be largely driven by safety issues (Zheng et al., 2021). As other examples, Hsu and Chen (2018) and Xi and Hamari (2020) determine the role of gamification in improving user engagement/experience and brand awareness towards a brand, which – during pandemic – may be complemented or superseded by factors including brand's protection motivation. In different words, during COVID-19

pandemic, customer behavior is likely to reveal different dynamics (e.g. by displaying increased psychological fear; Rather, 2021), thereby tend to challenge certain insight professed in literature under regular market situations and needs further exploration.

In response to the above-mentioned research gaps, this research investigates the impact gamification design/features on CBE, which subsequently effects brand co-creation, loyalty and positive-WOM during pandemic. Based on this justification, this paper's contributions to the marketing (branding) literature are as follows. First, employing service-dominant logic (SDL) and protection motivation theory (PMT) perspectives, we develop and test a framework that examines the effects of destination brand-based gamification on CBE, BC, loyalty, and positive-WOM as outlined. As noted, while existing have addressed these factors, little remains known about their conceptual relationship during (vs. *pre-*) pandemic, thereby warranting further research. Particularly, these analyses are of value, as the more marketers are capable to promote CBE with their brands during pandemic, the higher their expected sales, contributing to the firm's pandemic survival, and performance (Hollebeek et al., 2021; Itani & Hollebeek, 2021). This study thus extends and complements recent marketing research (Eisingerich et al., 2019; Hsu & Chen, 2018; Xi & Hamari, 2019, 2020), which calls for more interest to gamification during COVID-19 pandemic. Further, assessment of the proposed concepts interface is essential, as extant destination-based research has usually explored such constructs in isolation (Leclercq et al., 2018; Xi & Hamari, 2020; Xu et al., 2017), exploration of these relationships lags behind, therefore demanding further-research particularly during pandemic.

Second, while existing research has investigated the CBE's nomological network, limited remains acknowledged about the impact of CBE on co-creation, loyalty or positive-WOM (Kumar & Nayak, 2019; Rather et al., 2021; So et al., 2020; Thakur, 2019; Unnava & Aravindakshan, 2021) to highlight CBE's key role in operating tourism brands during (vs. *pre-*) pandemic. Similarly, although many factors have been documented to effect the interface of CBE and loyalty/WOM (e.g. satisfaction/commitment/trust; Harrigan et al., 2018; Li et al., 2020), our study observes a lack of destination brand-based understanding, therefore again providing a springboard for further research in this growing field.

Third, our research explores the mediating effect of CBE in effecting the links between gamification/BC, gamification/BL, and gamification/positive-WOM during pandemic, thus extending Abou-Shouk and Soliman (2021); Rather et al. (2021), Harrigan et al. (2018) and Xi and Hamari (2020) studies. Fourth, brand loyalty's reciprocal relationship with CBE offers novel insights into consumer-brand relationships during crises (Brodie et al., 2011; Pansari & Kumar, 2017), which has not been explored in existing studies until now. We expect pandemic-based customers to engage differently with destination brands (vs. regular market conditions), as examined further in the present study.

Finally, this study explores the moderating effects of protection motivation (PMO) and psychological fear-of-COVID-19 (PFC) in the proposed links of CBE/BC, CBE/BL, and CBE/positive-WOM during pandemic (Hassan & Soliman, 2020; Zheng et al., 2021), enlightening yet another crucial managerial insight. While, unlike various existing studies that consider PMO and PFC as antecedents or mediating role towards brand-based outcomes including loyalty and positive-WOM (Bhati et al., 2021; Chua et al., 2020; Kim et al., 2021), our research proposes that PMO and PFC to exert imperative

moderating effects on proposed links. Based on our PLS-SEM findings, this research identifies key differences in the relations between proposed associations, thus yielding crucial strategic-and practical- implications.

2. Theoretical background

2.1. Gamification

Gamification is defined as design approach, which tries to produce almost same positive experiences as those perceived in games, and thus effect users cognitive-processes and behaviors (Huotari & Hamari, 2017). Gamification definitions usually highlight on either game design (i.e. what elements of design can be employed in gamification; Deterding et al., 2011) or experiential aspect (Hogberg et al., 2019). Research related to gamification, game design and participant typologies, a difference is usually made between three main categories of game design and game mechanics related to gaming motivations including, social interaction-related; immersion-related and achievement-related dimensions (Xi & Hamari, 2020).

Furthermore, we discuss the dimensions (classification) of gamification-design including social interaction-, immersion-, and/or achievement-related features. The *social-interaction-related* features (SRF) are primarily utilized to facilitate player's social-interactions (e.g. Jang et al., 2018) and involve game mechanics for instance commenting, competition, group, likes, and team (Xi & Hamari, 2020). Therefore, once more interactions with social-related gamification elements/features exists, consumers/users could simply get/share information regarding the brand with other peers (Leclercq et al., 2018).

Achievement-related features (ARF) mainly try to increase the user's sense-of-accomplishment, associated with cognitive style, and are goal-driven behavior. ARF incorporate game mechanics like missions, challenges, goals, badges, progression metrics, or leaderboards etc. include effort investment, goal-structures, and optimizing customer behavior to require more information processes (Xu et al., 2017).

Immersion-related features (IRF) are usually linked with optimal/flow experience and/or experience of expressive-freedom (Wolf et al., 2020), that is more affective and emotional elements (i.e. joy, enjoyment, surprise or pride). IRF mostly attempt to immerse the user in self-directed curious activity, which includes storytelling, avatars, narrative structures, or role-play mechanics (Xi & Hamari, 2020; Xu et al., 2017). It provides a chance for users (tourists) to virtually experience the destination brand (Xu et al., 2017).

2.2. Service-Dominant logic

Service dominant logic (SDL) holds that engaged consumers investing improved resource levels in specific interactions are offering services for others or themselves, by integrating resources for value- creation purposes (Hollebeek et al., 2019b). Further, SDL-informed lens suggest that, brand value is co-created with network of social interactions and relationships among all stakeholders; (Hollebeek et al., 2019b), such as consumers and online brand communities (see also Merz et al., 2009). Another assumption of SDL is that, value of a system or (a service) emerges from the voluntary user-driven interaction

between user and system (Vargo & Lusch, 2016). Drawing on SDL perspective; Vargo and Lusch (2016); Xu et al. (2017) advocate that gamification acts as a service-system consists of process bundles, coproduced by game-players and developers. Hence, game-customers /users evolve as an operant resource (e.g. knowledge, skills) in CBE/co-creation towards game and firm/brand (Nobre & Ferreira, 2017; Wolf et al., 2020).

Gamification could be linked to online brand communities or social platforms (networks) through game elements/features. Social platforms provide an informal ecosystem wherein gamers/users would share- and interact- information with others, to make their experience more pleasant and entertaining (Buhalis et al., 2019; Xu et al., 2017). A substantial proportion of game-users value social-networks, social recognition, rankings, and rewards (Nobre & Ferreira, 2017). Implementing most active means of gamified system can increase brand-engagement, participation and co-creation with brand (Huotari & Hamari, 2017; Xi & Hamari, 2020).

Brand managers are adopting game elements to attain their objectives of customer-engagement, motivation, brand productivity and/or brand loyalty (e.g. rewards, points, badges, progressions, levels (Hofacker et al., 2016; Huotari & Hamari, 2017), which are hard to achieve via traditional methods of marketing (Xi and Hamari 2020). Gamification is particularly suitable for firms/brands or (businesses) with a high experiential and interactive nature (like tourism destination brands), which appeals for engagement and motivation (So et al., 2020; Xi & Hamari, 2020). For example, recently *TripAdvisor* designed gamification apps to inspire and motivate travelers to contribute content- and interact- with peers so as to exchange travel-resources/feedback (Stadler & Bilgram, 2016). Gamification apps also offer tourists with location-based content when on the go and with offline city guides. Moreover, Buhalis et al. (2019) research emphasized the impending use of gamification to explore historical-destination brands/attractions and sustainability- issues. Similarly, S7-airlines developed a gamified-loyalty-program, which can track consumer's location when opt for "I am home" feature against a reward of 100-miles (Spais et al., 2021).

2.3. Protection motivation theory

As an affective-cognitive behavioural framework, Protection Motivation Theory (PMT) intends to predict the pandemic-related behaviors and attitudes (Rogers, 1975). It was developed from fear/awareness of a threat to well-being and attitude change of individuals (Rogers, 1975). Protection-motivation is "an intervening variable that arouses, sustains, and directs activity to protect the self from danger" (Conner & Norman, 2005, p. 9). It also refers to individual's intent to adopt recommended behaviors in protecting themselves against a threat (Zhao et al., 2016). Tourism works mostly adopted PMT to investigate tourist's protective behaviors and perception in relation to risky tourist activities or destination brands (Wang et al., 2019; Zhao et al., 2016). PMT-informed lens proposes "that when people are presented with a threat, they experience the cognitive process of both threat and coping appraisals" (Zhao et al., 2016), is broadly employed in tourism (Bhati et al., 2021; Wang et al., 2019).

In the present digital world, gamification, social media platforms, or online brand communities are famous and deeply effect tourist's behaviors or intentions (Narangajavana et al., 2017; Shawky et al., 2020; Xu et al., 2017). Since the past decade,
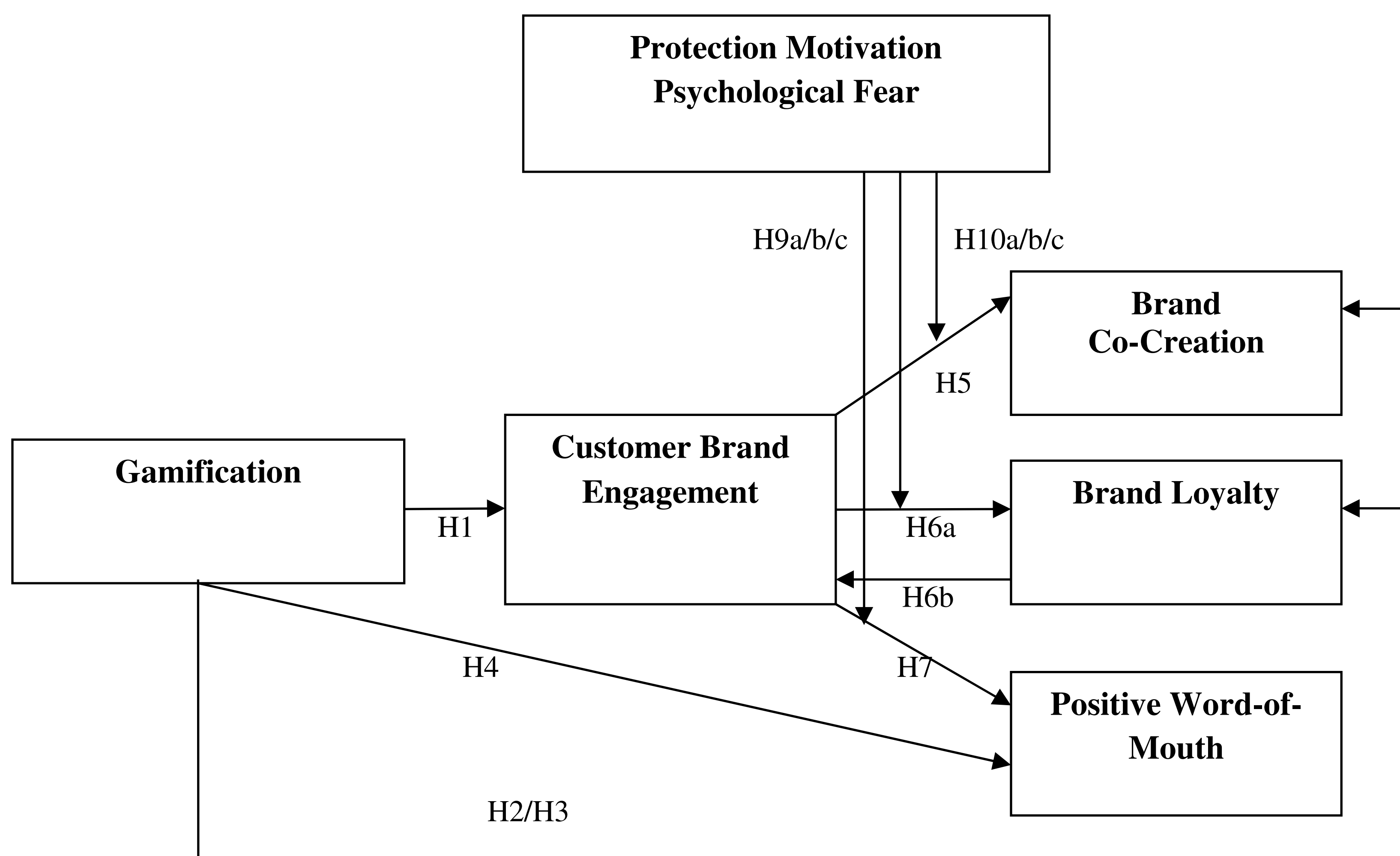
Figure 1. Conceptual framework.

many destination-brand based marketing- campaigns and activities have been conducted through digital-platforms, including gamification and social media (Buhalis & Sinarta, 2019; Harrigan et al., 2018; Yang et al., 2017). Various studies have employed PMT-framework to examine the social-media's and marketing-communication techniques' effectiveness (Bhati et al., 2021; Rather, 2021). For example, drawing on PMT, research advocates that destination brands use gamification and social media to alleviate tourist's perceived fear, which effects their destination perception (Abou-Shouk & Soliman, 2021; Bhati et al., 2021; Huynh, 2020). Relatedly, Rather (2021) used PMT to ascertain the role of social media on customer engagement, which consequently impacting tourist's revisit intention. Following these studies, our research extends PMT-perspective to identify the moderating roles of *protecting motivation* and *psychological fear* in the relationship between customer brand engagement/co-creation, customer brand engagement/loyalty, and customer brand engagement/positive-WOM with destination brands during (vs. *pre*)- the pandemic, as anticipated in conceptual model (Figure 1).

2.4. Gamification-Based customer brand engagement and brand co-creation

In recent years, CBE has emerged into a key strategic imperative in marketing (e.g. Hollebeek et al., 2021; Islam & Rahman, 2017; Khan et al., 2020; Kumar & Pansari, 2016). First, technological developments and the rise of social media offer foundation to re-consider the current CBE conceptualizations (Shawky et al., 2020; Unnava & Aravindakshan, 2021). Social media impart users or consumers interactive experiences to build value, and engage towards brand/company (e.g. through likes, reviews, shares, photos, comments, or other marketing resources; Harrigan et al., 2018; Islam et al., 2020; Rather & Hollebeek, 2021), that may also attract other consumer's contributions.
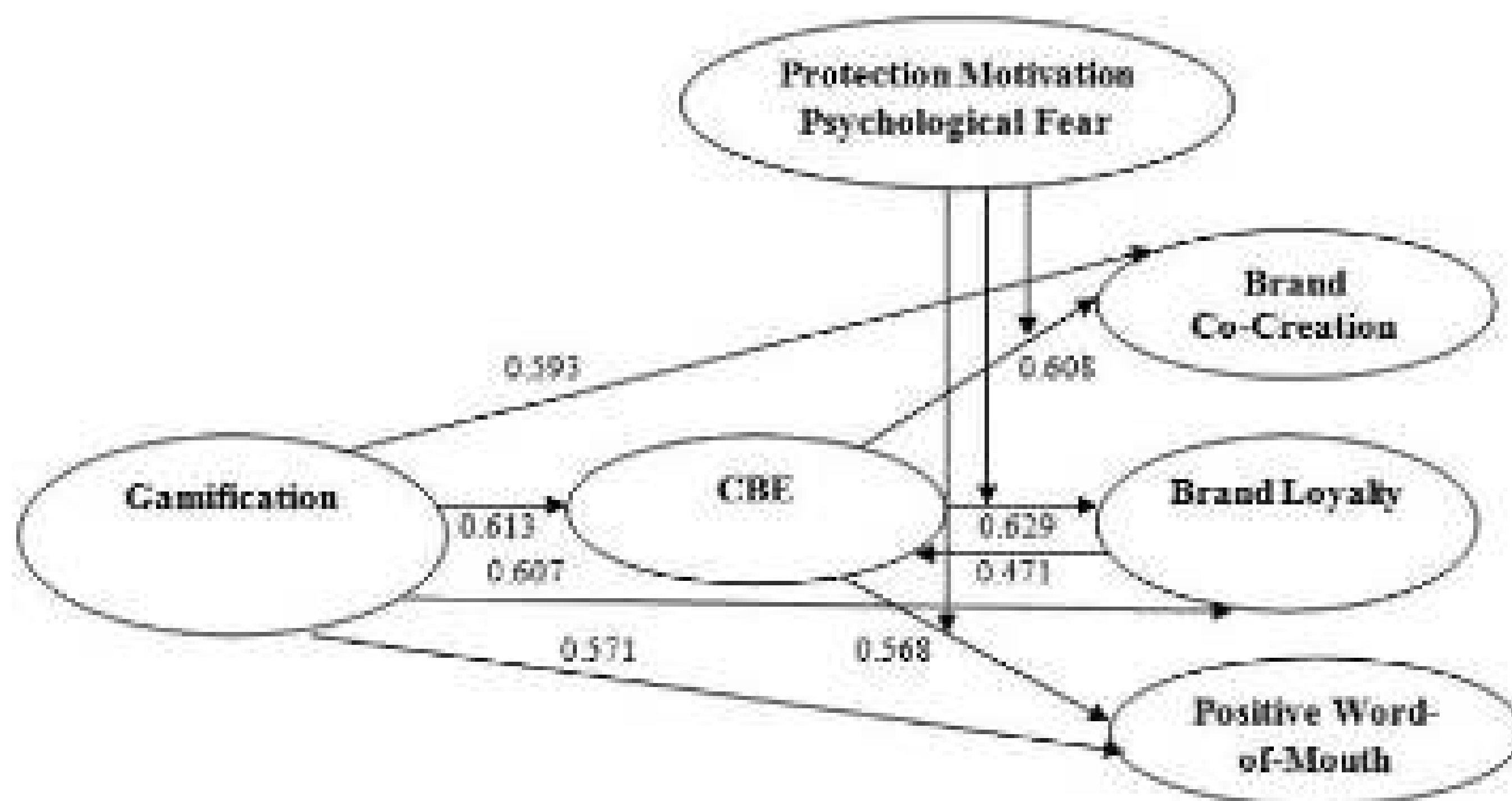
Figure 2. Structural model.

Gamification-based CBE can aid tourists influence over other visitors or sharing recommendations or personal experiences (Brodie et al., 2013; Xi & Hamari, 2020). As per Shawky et al. (2020), the customers' role has changed, representing functions as and differentiators, innovators, enablers or coordinators. In these roles, consumers contribute to and delivery/development of new services/products, engage other consumers and users, develop communities, interact with non-customers, and distinguish among multiple offers in market. Further, gamification-based CBE affects various factors both directly as well as indirectly to organizational/brand performance via collaborative activities of product-development, cost reduction, sales growth, increased brand advocacy, co-creation experiences (Hollebeek et al., 2014; Nobre & Ferreira, 2017) or increased social network influence (e.g. Kumar & Pansari, 2016; Rather & Camilleri, 2019).

Second, although there is no consent about CBE's conceptualization, as exemplified by the multitude proposed definitions. For instance, Brodie et al. (2011, p. 258) consider SDL-informed CBE as "a psychological state, which occurs by virtue of interactive customer experiences with a focal agent/object [brand] within specific service relationships" Based on SDL perspective, CBE is defined as "a consumer's investment of cognitive, emotional, behavioral and social resources during or related to specific brand interactions" (Hollebeek et al., 2019b, p. 171), which has more relevance in tourism destination context (Rather & Hollebeek, 2020, 2021; So et al., 2020). These definitions reveal a focus on SDL-informed CBE-based consumer-brand interactivity, as employed by most CBE-scholars (Harrigan et al., 2018; Pansari & Kumar, 2017). Thus, SDL has been also adopted as a key theoretical foundation for CBE (Brodie et al., 2011; Hollebeek et al., 2019b; Rather et al., 2021).

Third, CBE has been generally viewed as a multi-dimensional construct, which involves cognitive-, emotional-, and behavioral- dimensions (Harrigan et al., 2018; Kumar, 2021; Rather, 2020; Rather et al., 2021; Vivek et al., 2012). Few researchers broaden the framework/model to incorporate a social-CBE component (Brodie et al., 2013; Rather & Camilleri, 2019), that manifests due to consumers' aspiration for social-interactions or connections in their interactions, which is most relevant in the online contexts, and entails participating and socializing in the online communities with others (Vivek et al., 2014; Xi & Hamari, 2020).

Like CBE, brand co-creation is defined as "joint creation of value by company/brand and customer, allowing the customer to co-construct the service experience to suit her context" (Prahalad & Ramaswamy, 2004, p. 8) On the other hand, Vargo and Lusch (2016, p. 9) define brand co-creation as "the actions of multiple actors, often unaware of each other, that contribute to each other's wellbeing." Despite their differences, these definitions share co-creation's interactively generated, value-creating nature (Rather et al., 2021). Thus, brand co-creation is crucial in tourism destination brand context, which is generated due to the interaction of various actors, e.g. firms/brands and customers; Sugathan and Ranjan (2019).

3. Theoretical model and hypothesis development

3.1. Gamification and CBE interface

Following SDL-informed view, consumer's motivations may initiate engagement with many focal brands/objects through gamification (Nobre & Ferreira, 2017). For example, previous literature has examined the impact of gamification on engagement with many objects like social networks (e.g. Harwood & Garry, 2015), sport activities (e.g. Hamari & Keronen, 2017), online brand communities (Leclercq et al., 2017), healthcare services (Eisingerich et al., 2019), travel/tourism (Abou-Shouk & Soliman, 2021) or brands (Xi & Hamari, 2020). Each person can display diverse levels of engagement with these different focal objects/brands (Xu et al., 2017; Yang et al., 2017). Despite of these developments, little remains acknowledged regarding gamification's possible direct effect on CBE, co-creation, or loyalty in destination brand context during (vs. *pre-*) the pandemic.

In tourism destination brand context, gamification has been an essential technique to engage visitors and generate positive and meaningful experiences (Aebli, 2019). Visual reality games facilitate to protect- and interpret- heritage attractions by engaging visitors to learn about such attractions (Coghlan & Carter, 2020; Shen et al., 2020). Yang et al. (2017) stated that gamification as a system, which uses game-design so as to attain consumer engagement and retention. The main object of brands/firm's gamification use is to motivate/engage consumers (Hwang & Choi, 2020; Rodrigues et al., 2019). Similarly, Eisingerich et al. (2019) argued that gamification adoption allows brands/firms to foster CBE via social-interaction, behaviour change and reward gaining. Abou-Shouk and Soliman (2021) argued that gamification adoption intent by travel agencies/brands have significant effects on CBE towards brands. In the same way, SDL-informed-gamification appears to be an effective tool to develop customer engagement and behavior (Nobre & Ferreira, 2017). Service brands could promote norms-of-reciprocity and, thereby, generate avenues for brand-engagement in making consumers attracted towards the brand (Xi & Hamari, 2020). Therefore, drawing on SDL-perspective, once more interactions with social-related, immersion- and achievement-related gamification elements/features exist, consumers can get (share) information regarding the brand with other consumers that might stimulate CBE during (vs. *pre-*) the pandemic. Based on above discussion, the H1 is proposed as:

    H1:   Gamification is positively associated with CBE during-pandemic.

3.2. Gamification and brand co-creation interface

Brands can persuade customers to voluntarily become involved in brand co-creation experiences on various touch-points (Nobre & Ferreira, 2017). Developing brand co-creation with customers includes emotional, non-rational, and experiential-elements, thus, marketers should identity novel means of involving customer in co-creation behaviors (Hsu & Chen, 2018). By the way, gamification elements could be considered as a promising co-creation tool, because it provides social environment (Buhalis et al., 2019). Research studies highlighted that gamification including gamified-websites have significant effect on customers/users' experience to develop brand's business performance (Buhalis & Sinarta, 2019). It provides significant effects on customers' brand-trust and brand co-creation (Hsu & Chen, 2018; Xu et al., 2017).

Drawing on the theoretical perspective of SDL-informed lens (Nobre & Ferreira, 2017; Vargo & Lusch, 2016) in which the value of gamified system appears from the voluntary user-based interaction between a user and the system. Implementing most active ways of gamified system can thus enhance tourists' motivation and co-creation so as to promote a behavioural change; Xi and Hamari (2020). Thus, destination brands integrate gamification in their marketing- strategies in developing consumer participation (Abou-Shouk & Soliman, 2021; Harwood & Garry, 2015) and brand value co-creation (Leclercq et al., 2018; Xu et al., 2017). Following above arguments, we propose that, gamification is positively linked with brand co-creation during the pandemic, thus posit (see also Figure 1):

H2:   Gamification is positively associated with brand co-creation during pandemic.

3.3. Gamification, brand loyalty and positive-WOM interface

Relatedly, in tourism contexts gamification has been an essential technique to engage visitors and generate positive and meaningful experiences intentions, and recommendations (Abbasi et al., 2020; Aebli, 2019). Gamified consumer benefits involve attaining target-marketing consequences via engaging consumers and affecting their purchasing/ buying behaviors (Jang et al., 2018). In addition, literature of tourism destination brand experience does not include critical facets of interactive-motivation-, social play-, and fun-, which is stimulated by adopting game thinking and game design aspects (Xu et al., 2014). Therefore, tourism-destination brands can incorporate gamification in their branding practices in transforming purchasing behaviors, sustaining loyalty (Buhalis et al., 2019; Xu et al., 2014) and improving word-of-mouth recommendations (Abbasi et al., 2020). Based on above arguments, this research argues that more the gamification, higher is the visitor's loyalty and positive-word-of-mouth with destination brands during crises, leading to the subsequent hypotheses as proposed (see also Figure 1):

H3:   Gamification is positively associated with brand loyalty during pandemic.

H4:   Gamification is positively associated with positive-WOM during pandemic.

3.4. Customer brand engagement and brand co-creation interface

As noted, SDL-informed co-creation refers to consumer's perceived value, which arises due to collaborative, personalized, joint, or interactive brand-based activities with stakeholders in the service systems; (Hollebeek et al., 2019b). To interact with destination brand/firm, tourists would develop a certain level of perceived value from the interactions (Ranjan & Read, 2016), as proposed in SDL, consecutively impacting their future brand-related behaviors (Rather & Hollebeek, 2020; Sugathan & Ranjan, 2019).

With regards to SDL (Hollebeek & Rather, 2019; Rather, 2021; Vargo & Lusch, 2016), *value* is not just co-created by destination brands/firms, but can also be co-created by visitors/users (Nobre & Ferreira, 2017; Rather & Camilleri, 2019). As users become increasingly engaged, and are tend to share/get their experiences or individual information with peers (Eisingerich et al., 2019; Vargo & Lusch, 2004). Such as, once users' ascertain a higher degree of interaction, a positive impact on their consequent cocreation is predicted. Generally, as visitors engage with destination brands, co-creation develops, exposing it a CBE outcome (Hollebeek et al., 2019a; Rather & Camilleri, 2019). The foregoing literature informs that, CBE can develop brand co-creation during the pandemic and subsequently we posit (refer to Figure 1):

> **H5:** CBE is positively linked with brand co-creation during pandemic.

3.5. Customer brand engagement and brand loyalty interface

Brand loyalty refers to "a deeply held commitment to rebuy or re-patronize a preferred product/service consistently in the future, despite other situational and marketing variables that have the potential to induce switching behavior" (Oliver, 1999, p. 34). An important means to prompt, foster, or develop loyalty is by engaging consumers towards brand (Mody et al., 2019). However past research reveals brand loyalty as a key outcome of CBE (So et al., 2020; Vivek et al., 2012), relationship between these two constructs are poor in pandemic environment (Hollebeek et al., 2021; Rather, 2021), thus, we propose the impact of CBE on loyalty during (vs. *pre-*) pandemic.

In tourism-led social media context, experience offered by CBE facilitates in building an emotional tie with customers, which makes them loyal with the brand (So et al., 2020). Consumer's social-interaction with a brands or services could substantially develop their loyalty issues with the brands/services (Abou-Shouk & Soliman, 2021; Jang et al., 2018). Hsu and Chen (2018) argued that, user's experience generated via gamification is extensively influencing consumer's brand-trust and brand-loyalty. Tourism games can develop tourists' post-experience engagement (e.g. brand loyalty; Coghlan & Carter, 2020). DMOs use gamification to enhance brand loyalty with brands (Xi & Hamari, 2019). Likewise, Hwang and Choi (2020) also verified that, by means of gamification, brands would encourage customer's brand-loyalty with mobile environment. Based on the above discussion, we develop next hypothesis (see also Figure 1):

> **H6a:** CBE is positively linked with brand loyalty during pandemic.

3.6. Brand loyalty and customer brand engagement reciprocal/reverse relationship

The research advocates that, considering the process based characteristics of CBE (e.g. Brodie et al., 2011), few constructs including brand loyalty representing as CBE outcome may develop an iterative feedback loop, and thereby operate as CBE drivers in consequent service band interactions (e.g. Brodie et al., 2011; Van Doorn et al., 2010). It has been also advocated that the association between brand loyalty and CBE can be reverse/ reciprocal, because loyalty facilitates to develop long-term consumer-brand relationships (Kumar, 2020; Vivek et al., 2012) that stems from relationship marketing theory (Vivek et al., 2014). Based on theory of engagement, Pansari and Kumar (2017) claiming that when a relationship has emotional connectedness and satisfying, the partners become more engaged. Following these arguments, this research examines the effect of loyalty on CBE during pandemic, thus we posit:

H6b: Brand loyalty is positively linked with CBE during pandemic.

3.7. Customer engagement and positive word-of-mouth interface

In digital era, WOM-communications are not only direct-conversations, but online electronic word-of-mouth (e-WOM) also via information platforms including social platforms (Erkan & Evans, 2016). Due to social networking platforms, consumers can form virtual (brand) communities to exchange-, share-, and promote- their comments/ posts about services/products to widespread audience (Tapanainen et al., 2020). Due to rising use of social media platforms, the role of e-WOM may not be overlooked and research verified this assertion by suggesting that e-WOM had significant effect on customers than other forms of marketing communications (King et al., 2014).

Firms/brands consider WOM as a promotional tool (Bone, 1995). Positive WOM have various benefits including "relating pleasant, vivid, or novel experiences; recommendations to others; and even conspicuous display" (Anderson, 1998, p. 6; Strandberg et al., 2020). Vivek et al. (2012) claimed that engaged consumers are valuable catalysts of positive-WOM. Strandberg et al. (2020) argued that affective-place image and place-attachment are positively related to visitor's positive-WOM. Tapanainen et al. (2020) further argued that highly committed and engaged consumers are more likely to offer positive-WOM recommendations. Following the above discussion, next hypothesis is developed (see also Figure 1):

H7: CBE is positively linked with positive-word-of-mouth during pandemic.

3.8. Mediating role of customer brand engagement

Rooted in SDL-informed lens (Nobre & Ferreira, 2017; Vargo & Lusch, 2016), gamification advocates that consumers are the (co)-creators of value, and the firm/brand could simply offer affordances for the consumer to experience gamefulness (Hsu & Chen, 2018). Relatedly, adopting SDL-informed perspective, destination brands adopt gamification elements, which influence travel intentions, attitude or behaviour of tourists

(Huotari & Hamari, 2017). The present paper widens ingrained SDL-perspectives in coronavirus ecosystem to recognize the mediating effect of CBE, in influencing tourist's travel intents (e.g. Rather & Camilleri, 2019). Past works have claimed that in customer/ brand relationships, CBE performs a critical role of *mediator* between consumer perceptions/behavioral intentions association (Harrigan et al., 2018; So et al., 2020). While customer brand engagement is a *psychological* state take-place in the process of service experiences (e.g. Brodie et al., 2011), various scholars have employed mediating role of CBE (e.g. Abou-Shouk & Soliman, 2021; Rather et al., 2018).

Therefore, adopting SDL-informed perspective, extant literature suggests gamification's direct impact on CBE (Shawky et al., 2020; Xi & Hamari, 2020). Similarly, CBE's impact on co-creation and loyalty has also been recognized (Narangajavana et al., 2017; Rather et al., 2021). Regardless of such advancements, scarce remains identified regarding CBE's possible indirect effect on co-creation, loyalty and positive-WOM in destination brand context during (vs. *pre-*) the pandemic. Hence, next hypotheses are proposed as:

H8: CBE mediates the relationship between gamification and co-creation (H8a); gamification and loyalty (H8b); gamification and positive WOM (H8c).

3.9. Moderating roles of protection motivation and psychological fear

After WHO verified coronavirus infection as a pandemic, scores of persons realize the protection motivation and fear of COVID-19 outbreak effects consumers' health or lives (Hassan & Soliman, 2020; Zheng et al., 2021). Therefore, psychological fear and protection motivation are considerably proliferates amongst people because of sharing their feelings of fear, protection, and monitoring the behaviors other people (Chua et al., 2020; Zheng et al., 2021). Research have verified that PMT-based *psychological fear* and *protection motivation* could be an intervening and/or moderating factors, which effects person's protective behaviors and attitude with the threat-based destination brands (Zheng et al., 2021).

As discussed, protection motivation theory-informed theory suggests that, protection motivation and fear are important factors in predicting and/or moderating the pandemic-related behaviors, attitudes or behavioral intentions (Rogers, 1975; Wang et al., 2019). Researchers have established that protection motivation *and* fear (Chua et al., 2020; Zhao et al., 2016) can be dominant variables that influences customer's attitudes and behaviors with pandemic (Wang et al., 2019; Zheng et al., 2021). Considering that psychological fear can moderate the relation between perceived risk/social-media and (cruise) travel intention and tourist's behavioral intents (Bhati et al., 2021; Hassan & Soliman, 2020). Relatedly, as noted, following PMT-informed viewpoint, perceived risk and fear can moderate the association between social media/customer engagement and customer engagement/revisit intention (Rather, 2021). This study investigates *whether* psychological fear and protection motivation can alter the behavior/attitude of tourists to recommend, revisit the destination brand in future. Hence, this study investigates that psychological fear and protection motivation resulting due to coronavirus moderates the association between CBE/ loyalty, CBE/co-creation, and CBE/positive-WOM with destination brands during pandemic. Following these advices, consequent hypotheses are proposed as:

H9:   Protection motivation moderates association between CBE and BC (H9a); CBE and loyalty (H9b); CBE and positive-WOM (H9c).

H10:   PFC moderates the association between CBE and BC (H10a); CBE and loyalty (H10b); CBE and positive-WOM (H10c).

4. Methodology

4.1. Variables and measurement

Gamification features (i.e. frequency and importance) were gauged through thirteen-item scale, which includes social interaction-related features (3-items), achievement-related features (7-items) and immersion-related features (3-items) from Xi and Hamari (2020). A sample item states: "*Importance* of interacting with social networking features; *frequency* of interacting with social networking features".

The customer brand engagement was measured through three-dimensional scale which features enthused participation (3-items), conscious attention (3-items), and social connection (2-items) from Vivek et al. (2014) study. A sample item (conscious attention) reads: "*I love to learn more about this brand*"

Brand co-creation was measured through four-items, which include value-in-use and co-production by employing Grissemann and Stokburger-Sauer (2012). Sample-statement states: "*I am interested in participating in this co-creation experience*".

Protection motivation, which has been extensively employed in protective behavior works, was measured through four-items from (Zheng et al., 2021). Sample-statement reads: "*Protect myself from being infected by COVID-19 when travelling*" The PFC was adopted through three-items from Block and Keller (1995), with a sample-item: "*When I think regarding COVID-19 pandemic, I feel fearful*".

The positive WOM was adopted by three-items from Strandberg et al. (2020) having sample-item "*I would recommended this brand to others*" Finally brand loyalty was measured through three-items from Mody et al. (2019), with a sample item "*I consider this brand my first choice when traveling*" Pre-established scales adopting 7-point Likert scale were utilized (1- strongly disagree to 7- strongly agree (please see Table 1). Before conducting final-survey, pre-testing was performed with 30-respondents to check the scale's content validity that suggested no concerns.

4.2. Data collection and research design

In the present research, survey questionnaire was employed to gauge the variables delineated in the proposed model. Many destination brands are actively focusing on gamification, social media, and CBE to develop long-term consumer brand relationships in its highly competitive markets (Harrigan et al., 2018; Xu et al., 2014). In line with Buhalis and Sinarta (2019) research, which collected tourists/consumer's data from gamification apps and social media that assist brands/firms to understand their preferences, needs, and support in developing engagement and co-creation. We collected data through an online survey, shared on social media networks (mostly via Facebook, and Instagram) in the month of April, 2021. Respondents finished the survey considering the

Table 1. Respondent's demographic/travel characteristics.

Variables	Categories	Respondents' proportion	Respondents
Gender	Male	56%	179
	Female	44%	141
Age (years)	20 – 30	34%	109
	31 – 40	28%	90
	41– 50	25%	80
	Above 51	13%	41
Education	Secondary level or lower	11%	35
	Graduation	39%	125
	Post-graduation	38%	122
	Others	12%	38
Past visit/experience	One time	11%	35
	2 times	22%	70
	3 times	35%	112
	4 and more	32%	103
Frequency of using the apps/website	Once a week	28%	89
	Between 1 and 2 weeks	19%	61
	Between 2 and 3 weeks	19%	60
	Between 3 and 4 weeks	17%	54
	Once a month	17%	56

experience they had with website/application and the destination brand/s (i.e. Gulmarg, Kokernag, Srinagar, Varinag, and Phalgam) that provided it. This resulted in a final-sample of 320-valid responses after eliminating 20-responses because of inadequate information. The descriptive examination indicated that 56% of tourists were male-, and 44% were female. In addition, 34% were 20–30 years, 28% were 31–40 years, 25% were aged 41–50, and 13% were 51 years or above. The frequency of using gamification apps/websites, 28% users used once in a week, 19% between 1 and 2; 2 and 3 weeks respectively, 17% used once in a month, as shown in Table 1.

We employed G*Power to calculate the minimum required sample size for the proposed model, which was n = 129 at a statistical power of 0.80 (Faul et al., 2009), as exceeded by the attained sample size. Drawing on the suggestions of Armstrong and Overton (1977), we also performed a series of *t*-tests employing initial- and last- 10% of questionnaires. Results revealed no statistical difference between two-groups, revealing that non-response bias was not a concern in our research.

Subsequently, CMV was evaluated following couple of methods. Initially, Harmans' single-factor technique was executed, which revealed that total variance explained by single-factor was 31.3% (less than 50%), suggesting CMV is not a concern for the present study (e.g. Podsakoff et al., 2003). Secondly, following variance inflation factors (VIFs), CMV was further assessed. The Table 2 suggested that, VIF scores for the factors (varies from 1.953 to 3.248) are less than the recommended threshold values; 5.0, also confirming the absence of CMV- or multi-collinearity issues (e.g. Hair et al., 2017).

5. Analysis and results

Compared to covariance-based structural equation modelling (CB-SEM), partial least squares structural equation modeling (PLS-SEM) was utilized to examine the study model, as PLS-SEM deals best towards complex models; smaller sample-size, non-normally data, and predictive/exploratory studies (e.g. Hair et al., 2017). That is,

Table 2. Reliability and validity of construct and measurement items.

Constructs and indicators	Loadings	S	K
Achievement -related features (ARF) (AVE = 0.762, CR = 0.893, α = 0.925 , VIF = 2.528, SD = 1.54, M = 4.68)			
Importance of interacting with –			
Points/scores/experience points	0.89	−0.54	−0.49
Avatar/virtual identity/profile levels	0.82	−0.18	−0.63
Badges/medals/trophies	0.81	−0.53	−0.67
Status bars/progress bars	0.85	−0.43	0.14
Virtual currency/coins	0.82	−0.65	0.72
Increasingly difficult tasks	0.91	−0.21	−0.42
Leaderboards/rankings/highscore lists	0.89	−0.43	−0.31
Frequency of interacting with–			
Points/scores/experience points	0.91	−0.53	−0.17
Avatar/virtual identity/profile levels	0.88	−0.26	−0.83
Badges/medals/trophies	0.83	−0.38	0.45
Status bars/progress bars	0.84	−0.42	0.26
Virtual currency/coins	0.81	−0.74	−0.45
Increasingly difficult tasks	0.92	−0.59	−0.37
Leaderboards/rankings/highscore lists	0.79	−0.83	−0.53
Immersion -related features (IRF) (AVE = 0.790, CR = 0.884, α = 0.912 , VIF = 2.183, SD = 1.62, M = 4.23)			
Importance of interacting with–			
Narrative/story	0.81	−0.45	−0.16
Customization/personalization	0.78	−0.37	0.41
Avatar/virtual identity/profile	0.90	−0.65	−0.53
Frequency of interacting with–			
Narrative/story	0.92	−0.42	0.19
Customization/personalization	0.88	−1.63	0.75
Avatar/virtual identity/profile	0.79	−0.73	−0.82
Social interaction -related features (SRF) (AVE = 0.771, CR = 0.902, α = 0.916 , VIF = 2.175, SD = 1.31, M = 4.42)			
Importance of interacting with –			
Social networking features	0.86	−0.83	−0.18
Competition	0.92	−0.79	−0.82
Team	0.90	−0.32	−0.57
Frequency of interacting with–			
Social networking features	0.87	−1.30	0.68
Competition	0.86	−0.74	0.82
Team	0.84	−1.02	−0.65
Enthused Participation (ENP) (AVE = 0.754, CR = 0.914, α = 0.915 , VIF = 2.347, SD = 1.32, M = 3.64)			
I spend plenty of my time in this brand	0.93	5.23	1.45
I am passionate about this brand	0.91	5.65	1.32
My days will not be the same without visiting this brand	0.90	5.24	1.27
Conscious Attention (CAT) (AVE = 0.725, CR = 0.918, α = 0.927 , VIF = 3.248, SD = 1.34, M = 3.57)			
I love to learn more about this brand	0.94	5.52	1.21
I pay plenty of attention to anything about this brand	0.91	5.76	1.14
Anything linked to this brand captures my attention	0.93	5.74	1.12
Social Connection (SCO) (AVE = 0.735, CR = 0.901, α = 0.894 , VIF = 1.953, D = 1.43, M = 3.82)			
I love to visit this brand with my friends	0.90	5.68	1.76
I enjoy this brand most when I am with others	0.93	5.87	1.68
Brand Co-creation (BC) (AVE = 0.698, CR = 0.884, α = 0.885 , VIF = 2.671, SD = 1.69, M = 3.78)			
I have the intention to discuss this co-creation experience with the brand	0.75	−0.79	0.84
I am interested in participating in this co-creation experience	0.92	−0.55	1.08
I intend to actively involved (participated) in this co-creation experience	0.82	−0.68	1.26
I have used my experience from past visits so as to arrange this trip	0.90	−1.0	0.43
Brand Loyalty (BL) (AVE = 0.738, CR = 0.893, α = 0.915 , VIF = 2.478, SD = 1.61, M = 4.71)			
I consider this brand my first choice when traveling	0.91	−0.83	0.94
I would do more business with this brand in the next few years	0.83	−0.64	1.37
I would choose this brand for future travel	0.89	−0.62	0.91
I would choose this brand to find accommodations for a future trip	0.88	−0.43	−0.88
Fear of COVID-19 (PFC) (AVE = 0.757, CR = 0.926, α = 0.934 , VIF = 3.014, SD = 1.18, M = 5.86)			

(*Continued*)

Table 2. (Continued).

Constructs and indicators	Loadings	S	K
When I think regarding COVID-19 pandemic, I feel fearful	0.89	−0.63	0.65
When I think regarding COVID-19 pandemic, I feel scared	0.76	−0.49	0.55
When I think regarding COVID-19 pandemic, I feel afraid	0.84	−0.13	0.62
Positive WOM (WOM) (AVE = 0.745, CR = 0.847, α = 0.924 , VIF = 3.149, SD = 1.43, M = 4.56)			
I would recommended this brand to others	0.87	−0.35	−0.76
I "talk up" this brand to my friends	0.84	−0.33	0.35
I try to spread the good-word about this brand	0.79	−0.41	0.76
Protection motivation (PMO) (AVE = 0.778, CR = 0.887, α = 0.923 , VIF = 3.081, SD = 1.34, M = 5.27)			
Protect myself from being infected by COVID-19 when travelling	0.91	−0.55	0.94
Engage in activities that protect myself from being infected by COVID-19	0.87	−0.32	1.35
Expend effort to protect myself from being infected by COVID-19	0.82	−0.57	1.43
Obey policies to protect myself from being infected by COVID-19	0.91	−0.64	0.83

Note: α = Cronbach's alpha, AVE = average variance extracted, CR = composite reliability, M = mean, SD = standard deviation, S = Skewness, K= Kurtosis.

PLS-SEM neither needs large samples nor assumes that the data are normally distributed, thereby providing considerable analytical flexibility (Hair et al., 2017). PLS-SEM has also the capability to test the proposed associations, while take a prediction focus to assess the anticipated model (Hair et al., 2019). Furthermore, past (tourism, marketing) researchers have widely used PLS-SEM (vs. CB-SEM)-based analysis due to its higher statistical power (e.g. Itani & Hollebeek, 2021; Rasoolimanesh et al., 2021; Zheng et al., 2021).

5.1. Measurement model evaluation

Table 2 /3 indicates the psychometric properties i.e. reliability and validity of the factors employed in model. First, results advocate the measure's satisfactory internal consistency, with the lower Cronbach's alpha equivalent to 0.885, thereby above the cutoff value 0.7 (Hair et al., 2017). Second, composite reliability was examined of all the measures, with the lower value being (0.847), thus more than threshold value 0.60. Furthermore, all the factor loadings were significant, ranging from 0.75–0.93, thereby establishing convergent validity (Bagozzi & Yi, 1988; Raza et al., 2020). Investigation of skewness and kurtosis statistics (Table 2) revealed that the values were in the standard threshold of ±2 (e.g. George & Mallery, 2016).

As suggested by Fornell and Larcker (1981), the square roots of the AVE values of each factor were more than the consequent latent-variable correlations, there confirming discriminant validity. Further, all HTMT-ratio were under the cut-off value of 0.9 (Henseler et al., 2016), which supports discriminant validity, as indicated in Table 3.

5.2. Structural model assessment

The structural model was tested by adopting several standards. The standardized root mean square residual (SRMR) was assessed as model-fitness standard (Henseler et al., 2016). They suggest that, a SRMR value less than .08 is considered an excellent model-fit. The result of this study (SRMR = 0.065) thereby verifies a satisfactory model-fitness. Furthermore, the model's prediction power was investigated via R^2 and Q^2 values of

Table 3. Fornell-Larcker criterion and HTMT ratios.

Construct	GAM	PFC	ENP	CAT	SCO	WOM	BC	PMO	BL	1RF	SRF	ARF
Gamification (GAM)	**0.89**	0.50	0.53	0.54	0.48	0.47	0.48	0.53	0.54	0.52	0.49	0.56
Fear of COVID-19 (PFC)	0.51	**0.88**	0.51	0.46	0.47	0.50	0.51	0.44	0.52	0.57	0.48	0.53
Enthused Participation (ENP)	0.52	0.55	**0.85**	0.47	0.50	0.48	0.53	0.56	0.55	0.53	0.50	0.52
Conscious Attention (CAT)	0.48	0.51	0.56	**0.84**	0.58	0.52	0.49	0.53	0.54	0.50	0.55	0.51
Social connection (SCO)	0.49	0.48	0.47	0.50	**0.87**	0.54	0.45	0.49	0.48	0.49	0.59	0.48
Word of mouth (WOM)	0.52	0.54	0.52	0.51	0.52	**0.85**	0.58	0.52	0.57	0.41	0.40	0.46
Brand co-creation (BC)	0.50	0.46	0.49	0.52	0.54	0.47	**0.81**	0.49	0.44	0.47	0.42	0.49
Protection motivation (PMO)	0.47	0.52	0.56	0.51	0.50	0.54	0.56	**0.83**	0.57	0.44	0.53	0.47
Brand loyalty (BL)	0.48	0.49	0.51	0.54	0.57	0.50	0.55	0.46	**0.86**	0.53	0.59	0.54
Immersion features (IRF)	0.47	0.48	0.50	0.59	0.51	0.49	0.54	0.49	0.54	**085**	0.56	0.59
Social interaction features (SRF)	0.49	0.46	0.55	0.56	0.50	0.48	0.58	0.48	0.49	0.50	**0.83**	0.53
Achievement features (ARF)	0.52	0.58	0.53	0.57	0.52	0.51	0.52	0.45	0.55	0.58	0.48	**0.87**

Note: Bold font = square-root of the AVE, above bold diagonal factors are the HTMT ratios, under the bold diagonal are estimated correlations.

predicted factors. Based on the recommendations of Falk and Miller (1992), all of the R^2 values should be above 0.10; BC: 0.576; CBE: 0.589; BL: 0.597; positive-WOM: 0.534). In addition, all Q^2 (Stone-Geisser) values for dependent (endogenous) factors (BC: 0.153; CBE: 0.169; BL: 0.178; positive-WOM: 0.149) were positive, that substantiates the acceptable predictive model relevance (Hair et al., 2017; Henseler et al., 2016).

5.3. Hypothesis testing

PLS-SEM was applied to estimate the path coefficients for proposed model's relationships (see also Table 4). Gamification exercising a strong effect on CBE ($\beta = 0.613$, $p = .000$), followed by loyalty ($\beta = 0.607$, $p = .000$), co-creation and positive-WOM ($\beta = 0.593$, $p = .000$) ($\beta = 0.571$, $p = .000$), which supports our H1-H4. Proposed in H5, H6a, and H7, CBE significantly increases tourist's brand loyalty; $\beta = 0.629$, $p = .000$), co-creation; $\beta = 0.608$, $p = .000$) and positive-WOM; $\beta = 0.568$, $p = .000$), thereby supporting these three hypotheses. The model has also been re-estimated to investigate the reciprocal/reverse relationship between brand loyalty and CBE. The reciprocal effects indicates the significant positive impact of loyalty on CBE; $\beta = 0.471$, $p = .000$), hence supports H6b. Although, the effect is weak vs. the effects of CBE on loyalty (See also Figure 2).

Table 4. Structural model results.

Hypotheses	Paths	Effect (β)	t-value	f^2	Remarks
H1: Gamification ⇀ CBE		0.613**	9.15	0.306	Supported
H2: Gamification ⇀ brand co-creation		0.593**	7.37	0.253	Supported
H3: Gamification ⇀ brand loyalty		0.607**	8.69	0.293	Supported
H4: Gamification ⇀ word of mouth		0.571**	5.43	0.236	Supported
H5: CBE ⇀ brand co-creation		0.608**	8.78	0.298	Supported
H6a: CBE ⇀ brand loyalty		0.629**	9.68	0.324	Supported
H6b: Brand loyalty ⇀ CBE		0.471**	3.26	0.178	Supported
H7: CBE ⇀ word of mouth		0.568**	4.65	0.165	Supported

Note: CBE: $R^2 = 0.589$; $Q^2 = 0.169$; BC: $R^2 = 0.576$; $Q^2 = 0.153$; BL: $R^2 = 0.597$, $Q^2 = 0.178$; WOM: $R^2 = 0.534$, $Q^2 = 0.149$. **$p < .01$; ***$p < .001$.

After that, on the basis of Cohen's (1988) cut-off values, effect size (f^2) is evaluated: 0.35 (strong), 0.05 (small), and 0.15 (medium) effects of exogenous factors on endogenous variables. Effect size (f^2) of relationship-paths varies from 0.16 to 0.32, which indicates medium- to strong- effect (Table 4).

5.4. Mediation analysis

Following Hayes and Scharkow (2013) approach, mediation was evaluated by employing product-of-coefficients method via bootstrapping-based re-sampling. Gamification (GAM) has been viewed to exercise an indirect effect on brand co-creation (BC) via CBE (coefficient = 0.318; 95% CI [0.189, 0.347]). Furthermore, direct-impact of GAM and BC has been significant; coefficient = 0.158; 95% CI [0.024, 0.259]), signifying partial-mediation, which supports H8a. Moreover, indirect effect of GAM on brand loyalty (BL) has been statistically significant; coefficient = 0.335; 95% CI [0.202, 0.365]), and its direct impact has not been statistically significant; coefficient = 0.065; 95% CI [−0.022, 0.107]), advocating complete mediation, thus supports H8b. Finally, the indirect effect of GAM on positive-WOM through CBE (coefficient = 0.297; 95% CI [0.175, 0.318]), and their direct effects are also significant (coefficient = 0.034; 95% CI [0.021, 0.224]), revealing partial-mediation, which supports H8c. Overall-, our mediation-analyses advocate that gamification in-directly increases co-creation, loyalty and WOM by promoting CBE. The overall results are provided in Table 5.

5.5. Moderation analysis

Lastly, moderating effect of psychological fear (PFC) in our structural model's proposed links CBE/BC, CBE/BL, and CBE/positive-WOM was estimated via Fassott et al. (2016) PLS-SEM method. Results imply the presence of significant-negative moderating interaction effect of PFC, thus substantiating H9a/b/c. Results

Table 5. Mediation testing results.

Model	Indirect Effect	S.E	95% Confidence Interval		Direct Effect	S.E	95% Confidence Interval	
			Boot Lower	Upper Boot			Lower Boot	Upper Boot
H8a: GAM→CBE→BC	0.318	0.045	0.189	0.347	0.158	0.072	0.024	0.259
H8b: GAM→CBE→BL	0.335	0.052	0.202	0.365	0.065	0.082	−0.022	0.107
H8c: GAM→CBE→WOM	0.297	0.032	0.175	0.318	0.034	0.079	0.021	0.224

Table 6. Moderating effects.

Hypotheses	β	SD	t-statistics	p-value	Decision	Moderation
H9a: CBE× protection motivation →BC	0.301	0.128	8.550***	0.003	Supported	Yes
H9b: CBE × protection motivation →BL	0.332	0.119	9.431***	0.006	Supported	Yes
H9c: CBE× protection motivation →WOM	0.295	0.106	6.375***	0.001	Supported	Yes
H10a: CBE× PFC →BC	−0.356	0.254	3.532***	0.006	Supported	Yes
H10b: CBE × PFC →BL	−0.387	0.276	4.764***	0.007	Supported	Yes
H10c: CBE× PFC →WOM	−0.368	0.243	3.754***	0.005	Supported	Yes

Note: ***$p < .01$.

also suggest the existence of significant-positive moderating interaction effect of protection motivation (PMO), hence supporting H10a/b/c. For overall results, please refer Table 6.

6. Discussion and implications

6.1. Theoretical implications

Based on our analyses, this research contributes to the marketing (branding) literature by investigates the effects of destination brand-based gamification on CBE, co-creation, loyalty and positive-WOM during pandemic, which remains tenuous to-date. Particularly, given the pandemic's capability to substantially transform customers' brand engagement and purchase behavior (e.g. Eisingerich et al., 2019; Hollebeek et al., 2021), it is imperative to achieve further insights into these dynamics. In different words, this research providers an initial investigation of the impacts of gamification on CBE, in turn effecting co-creation, loyalty and positive-WOM during the pandemic. The results supplement existing gamification and CBE research, by linking the concept to brand co-creation, positive-WOM and loyalty, thus extending authors including Eisingerich et al. (2019), Xi and Hamari (2020) and Xu et al. (2017).

Second, our study also explores the need to investigate the missing links/mechanisms in developing destination brand-based CBE, which consequently effects co-creation, WOM and loyalty during pandemic (Itani & Hollebeek, 2021; So et al., 2021). As such, it makes a novel contribution to CBE/co-creation literature that has mostly addressed these concepts under regular-market situations so far (Eisingerich et al., 2019; Kim et al., 2021; Nobre & Ferreira, 2017; Unnava & Aravindakshan, 2021; Xi & Hamari, 2020). Examining the links among such factors may add towards developing brand/economic resilience during pandemic within destination brand context. Another novel contribution to marketing is the reverse (reciprocal) relationship between loyalty and CBE, which has not been reported to-date during pandemic. This is important, as it advocates customer-brand relationships are dynamic and complex (Brodie et al., 2011; Pansari & Kumar, 2017), that customers need to be loyal/satisfying in building their engagement during pandemic.

Third, our study extends existing SDL/PMT-informed based insights via its application to coronavirus pandemic. Thus, different theoretical frameworks may expand importance to explore tourist's pandemic-linked behavior, involving the regulatory-focus-theory, theory of planned behavior or self-determination theory to provide different key implications for marketing/tourism scholars (e.g. Hollebeek et al., 2021; Ryan & Deci, 2000), thereby generating a plentiful of further research opportunities. For instance, to what extent do our proposed relationships including the effects of pandemic-related psychological fear, protecting motivation and gamification on tourist's avoidance-behaviour (vs. loyalty) during pandemic (Zheng et al., 2021).

Finally, despite the fact that protection motivation and psychological fear were explored as an antecedent or mediating factor in literature with various settings (e.g. marketing, business, health; Chua et al., 2020; Kim et al., 2021; Zheng et al., 2021), limited works have investigated the key moderating roles of these variables with regard to destination brand issues during pandemic. The empirical findings uncover the

interaction roles PFC/protection motivation as psychological outcomes emerge from the pandemic. On contrary to past studies, our study investigated the moderation effects of PFC/protection motivation and offering empirical underpinning on how PFC related to COVID-19 pandemic negatively affected the direct-positive links among proposed associations. That is, the findings suggest that managers should focus on fostering customer's protection motivation and reduce their psychological fear, which – in turn – would stimulate their brand engagement, co-creation, loyalty and positive-WOM

6.2. Practical implications

Our study has many implications for marketing (destination brand) practitioners during pandemic. Firstly, our paper acknowledges the crucial role of gamification in improving CBE (H1), brand co-creation (H2), brand loyalty (H3), and positive-word-of-mouth (H4). Our study confirms that, firm/brand-based investments in gamification will offer imperative benefits. Therefore, destination brand marketers are advocated to extend different marketing strategies, which underscore the roles of destination gamification-based CBE, co-creation, loyalty and positive-WOM during epidemic. In line with existing studies, that gamification design elements or platforms may be viewed as an efficient communication tool for these tourism firms lacking direct relation with their consumers and target market, particularly during pandemic (Hollebeek et al., 2021; Spais et al., 2021). Further, as gamification- could be observed as an open source of consumer's insights, the particular assertion supports the ability of gamification as a marketing tool/ platform for innovative brand-management and brand co-creation and loyalty (Nobre & Ferreira, 2017).

Secondly, the research inferred CBE's fundamental role in determining brand co-creation (H5), loyalty (H6) and positive-WOM (H7), therefore supporting CBE's strategic importance in promoting consumer-brand relationships (Pansari & Kumar, 2017; So et al., 2020; Unnava & Aravindakshan, 2021; Xu et al., 2017) during outbreak (Hollebeek et al., 2021). For instance, to sustain existing (potential) consumers during outbreak, brand managers are advised to extend different service interaction platforms and technology-led efforts (So et al., 2020; Xi & Hamari, 2020), such as e-commerce websites-, mobile apps-, online brand communities, tourism-destination marketing efforts, like augmented-reality, tourism-destination marketing activities, virtual-reality destination-marketing touch points, location-based marketing activities and updated/innovative VR-based tours (Buhalis et al., 2019; Itani & Hollebeek, 2021), which are effective in engaging such customers during (vs. *pre-*) pandemic. Further, brand managers, policymakers can undertake actions, which include promotional initiatives, familiarization trips, to target other nations' tour operators via formal market-research to verify the safety of destination brands/sites (Hollebeek et al., 2021).

Finally, findings verify the moderation effects of PFC and protection motivation originated by COVID19 and illustrated that, PFC negatively influenced the associations linking CBE, BC, loyalty and positive-WOM, while positive moderating role of protection motivation in such proposed associations. Thus, destination brand marketers need to furnish relevance in their destination marketing strategies or advertising- efforts to reinforce CBE which in turn develops BC and visitor's loyalty and positive-WOM specifically during pandemic (Hollebeek et al., 2021; Rather, 2021). Our analysis confirms

the key role of PFC and tourist's protection motivation that can assist to ease the harmful effects of pandemic on tourist's revisit intent/loyalty and positive-WOM recommendation. To develop tourist's protection-motivation, destination brand marketers can adopt efficient communication interventions in increasing tourist's perceived efficacy during COVID-19. For example, tourist attractions/sites/destination brands can offer real-time information of social distancing (like tourist numbers at distinctive attractive spots) and messages about protective instructions (like reveal flourishing attainments in employing the recommended measures) for visitors. To enhance customer's perceived effectiveness of COVID-19 prevention, destination brand managers can advise measures, which may be simply learned and employed by tourists/users (Zheng et al., 2021).

6.3. Limitations and further research opportunities

In spite of its contributions, our study has many limitations, from which we obtain the following further research opportunities. First, our work is cross-sectional in nature, signifying that survey data was gathered at one specific time. Therefore, longitudinal research design would provide new generalisable results post epidemic.

Second, our data was gathered from emerging country (i.e. India), therefore providing a limited-representation of coronavirus dynamics in different sections of globe. Thus, we advocate the carrying out of more-empirical outbreak-linked research across/in different nations.

Third, future research may propose or test other drivers of CBE including customer satisfaction, consumer experience, perceived risk, and service recovery (Hollebeek et al., 2022; Khan et al., 2020; Shams et al., 2020) to provide new insights. Fourth, future studies may explore other gamification and CBE/co-creation consequences, including brand equity (Kim et al., 2021), brand trust/love, brand commitment (Hsu & Chen, 2018; Xu et al., 2017) brand attachment/identification (Bahri-Ammari et al., 2021) or negative-WOM may yield extra insight in post-COVID19 ecosystem.

Lastly, it may be remembered that, some other COVID-19 precedents may exist (e.g. Zheng et al., 2021). While, it is expected that tourism industry may have a distinct nature after COVID-19 crises, therefore, it will be crucial to explore this issue in near future.

Disclosure statement

ORCID

Raouf Ahmad Rather 🄳 http://orcid.org/0000-0002-9242-1165

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