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How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love

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ABSTRACT

Gamification is increasingly applied as a design strategy when improving various behavioral outcomes in the online retailing domain. Understanding the attributes of gamification marketing activities (GMAs) is critical for successful gamification, but perceived experience derived from the attributes of GMAs and its influence on desirable consumer behaviors have not been addressed so far in gamified online retailing studies. Thus, this paper aims to examine the relationships among GMAs' experience, value, satisfaction, brand love, and desirable consumer behaviors. To test these relationships in the research model, we developed a study using a sample of 242 online bookstore customers, and found that the experience of GMAs has a significant and positive effect on hedonic value and utilitarian value. The findings also confirm that hedonic value and utilitarian value significantly affect satisfaction and brand love. Finally, our results confirm that satisfaction has a significant and positive effect on brand love, and in turn, on desirable consumer behaviors (i.e., brand loyalty, positive word-of-mouth, and resistance to negative information). The findings of this study can permit online retailing companies to predict the future behaviors of their customers more exactly and guide their management of assets and gamification marketing activities.

1. Introduction

In recent years, the progress of online games and social software, when applied to e-business, has generated a new trend that appeals to user experience and creates active participation through "gamification" (Rodrigues, Oliveira, & Costa, 2016). The concept of gamification and its mechanics in non-game contexts have become a fast-emerging practice in marketing (Yang, Asaad, & Dwivedi, 2017). Marketing involves a certain degree of persuasion, motivation and manipulation, and thus gamification has great potential in marketing (Zichermann & Linder, 2010). However, this discussion on gamification has continued mainly in the realm of game studies and human–computer interaction (HCI) (Huotari & Hamari, 2017). Although games are used to improve services to consumers, only a few academic articles are related to the service or marketing literature (e.g., Hsu & Chen, 2018; Sigala, 2015; Yang et al., 2017). E-business is one of the fields where service marketing and technology are linked (Huotari & Hamari, 2017). Although empirical research is accumulating on the application of gamification in e-business, a gap still exists in our understanding about how gamification influences consumer behaviors.

Furthermore, as indicated by Zichermann and Linder (2010), even

though gamification is considered to be the next generation in marketing techniques, with potential to revolutionize human-computer interaction and user experiences by offering motivating, gameful experiences (Hamari 2017), empirical studies providing evidence of gamification's impact on consumer behavior and marketing are still lacking (Deterding, Dixon, Khaled, & Nacke, 2011; Hamari, Koivisto, & Sarsa, 2014; Hamari 2017). Specifically, a study by Sigala (2015) has investigated gamification experiences and perceived value obtained by customers when using gamified websites and the impacts of these gamified experiences on customers' online behaviors, such as website use and engagement. Investigating the usage experience and value perceived by users of gamification is very important, as usage experience and value better explain desirable consumer behaviors (i.e., brand loyalty, positive word-of-mouth, and resistance to negative information). Gamification is increasingly being used in e-business. However, in spite of the great potential of gamification in e-business, research investigating the impact of gamification on users' experiences and behaviors with a website and brand is also lacking. Moreover, research examining the perceived value provided by gamified websites is urgently needed, because it can inform professionals on how to design engaging gamified applications. Since gamification effects are greatly dependent

on its implementation context (Hamari et al., 2014), studies using a specific gamification context can also lead to more reliable results.

To address the gaps mentioned above, this paper examines the application and impacts of gamification marketing activities (GMAs) on the users' experience, value, satisfaction, brand love, and desirable consumer behavior within a specific e-commerce context. Specifically, we review previous studies on the relationship between gamification and the online retail experience, attributes of interactive communication media, gamification of advertising, and characteristics of online-shopping-related studies. The review of related studies ensures that the five constructs of entertainment, trendiness, interaction, intimacy, and novelty are fitting to operationalize gamification mechanics (Insley & Nunan, 2014; Pesare, Roselli, Corriero, & Rossano, 2016; Terlutter & Capella, 2013). In this paper, we conceptualize GMAs as use of gamification mechanics that include entertainment, trendiness, interaction, intimacy, and novelty in marketing activities to generate playful experiences and influence customers' perception of value, satisfaction, brand love, and behavior. That is, the experience of GMAs may play a vital role in evoking consumers' perception of value, satisfaction, and brand love, which assist in bringing about desirable consumer behaviors.

The customer experience forms consumer contexts and generates perceived value through diversified marketing methods (Chen and Lin, 2015). Customer experience has become a product attribute in the economic sense — a value-added element applied to differentiate goods and services (Wang, 2015). Consumers generate different psychological valuations through customer experience to establish metrics for evaluating the value that can be obtained from experiential services provided by businesses (Vera & Trujillo, 2013). Several works in the marketing and information system domain have confirmed that perceived value after experiencing a product or service is a determinant of users' satisfaction (e.g., Babin, Darden, & Griffin, 1994; Kesari & Atulkar, 2016; Kim, 2015). Batra and Ahtola (1990) indicated that consumers use services for contributory, utilitarian purpose, and consummatory hedonic fulfillment. Moreover, Venkatesh and Brown (2001) stated that utilitarian and hedonic value cover a broad set of factors that people consider important in use of information systems. Thus, measures of utilitarian and hedonic dimensions of perceived value enable retailers to test the effectiveness of product types that stress experiential strategies for potential customers.

Satisfaction is different from brand love; that is, satisfaction is perceived as transaction specific in contrast to brand love, which is linked with a longer-term relationship with the brand (Drennan et al., 2015). Carroll and Ahuvia (2006) wrote that brand love is developed through higher levels of satisfaction. The satisfaction level creates a basis for the formation of brand love (Unal & Aydm, 2013). Brand love can act as a motivator for consumers in developing and maintaining close relationships with companies (Reimann, Castaño, Zaichkowsky, & Bechara, 2012). Marketers have taken love as a construct that depicts consumers' strong emotional attachments to love objects, whether a brand, product or service (Ahuvia, 2005). Although brand love has emerged as an important consumer–brand relationship construct (Drennan et al., 2015), there is still less understanding about what causes a love relationship between a consumer and a brand, and what its behavioral consequences may be (e.g. brand loyalty, word-of-mouth, and resistance to negative information).

This study aims at addressing the knowledge gap by answering the research question: how do gamification marketing activities motivate desirable consumer behaviors? To develop our research model, we first identify the constructs of perceived GMAs, which include entertainment, interaction, trendiness, intimacy, and novelty. Then, we review prior literature on value to identify two typical types of value (i.e., utilitarian and hedonic value), satisfaction, brand love, and behavior, as well as other context-related literature to theorize specific relationships between model constructs. Specifically, this study evaluates the influence of perceived GMAs on the perception of consumer value,

satisfaction and brand love, and desirable consumer behaviors. Finally, this study investigates the key antecedents and consequences of brand love to understand how the mechanics of gaming, when applied to non-game activities, drive desirable consumer behaviors.

In summary, this study provides several contributions. First, this is the first research that provides a theoretical framework to identify the constructs of perceived GMAs, and to understand the effects of GMAs that include entertainment, interaction, trendiness, intimacy, and novelty on perception of value, satisfaction, brand love, and desirable consumer behaviors. Second, this study investigates the key antecedents and consequences of brand love to understand how the mechanics of gaming, when applied to non-game activities, drive desirable consumer behaviors. As the online environment is undergoing rapid changes, this study will redefine the properties that affect the performance of brands to help marketers manage and optimize these properties. This study proposes a strategy to enhance brand love by defining specific factors related to perceived value. The findings will enable brands to forecast desirable customer behaviors and manage their brands and gamification activities. This study makes an empirical and theoretical contribution to retailing literature by extending the knowledge on application of these important new online techniques (i.e. GMAs).

2. Gamification and GMA

Gamification has rapidly become a trend in the marketing field. Some marketers think of gamification as a new name for old marketing tools or as a new way of exploiting customers. In contrast, others regard it as a valid way to improve the value of a service. Gamification can be situated in a previously unoccupied space of marketing thinking. For instance, previously, full games have been applied as a value-added service on product web pages, and a series of games have been applied in educating consumers. Furthermore, loyalty programs can resemble game mechanisms, and have been applied to tender economic benefits to customers in exchange for their loyalty. However, the prior ways in which games and consumer behaviors have come together in marketing are not exactly the same as in gamification's popular conception.

From the perspective of service marketing, gamification can be defined as "*a process of enhancing a service with affordances for gameful experiences in order to support user's overall value creation*" (Huotari & Hamari, 2012, p. 19). The conceptualization is rooted in service dominant logic (Vargo & Lusch, 2004), which suggests that customers are the creators of value, and the company can merely provide affordances for the customer to experience gamefulness. This conceptualization of gamification implicitly states that the customer in the end determines whether they are engaged in gameful experiences and whether consequently the perceived value of the service is increased. Additionally, Huotari and Hamari (2012) emphasized that gamification has an effect on retention and customer loyalty, but the customers should first be engaged in gameful experiences. Gamification simply refers to adding game mechanisms into a service, which if well implemented becomes more engaging and attains better retention of customers.

Embracing gamification can be a marketing and business strategy applied to increase customer engagement and loyalty (Dubois & Tamburrelli, 2013). Gamification can increase marketing effectiveness in consumer markets (Hofacker, De Ruyter, Lurie, Manchanda, & Donaldson, 2016). There are three marketing concepts related to the gamification context: 1) engagement, which means the psychological investment of the consumer in the participating process (i.e., cognitive engagement), the development of emotional connections between the brand and the consumer while fulfilling the activities (i.e., emotional engagement), and the participation and the involvement of consumers in consumer markets and positive attitudes of the consumers during the GMAs (i.e., behavioral engagement) (Fredricks, Blumenfeld, & Paris, 2004); 2) brand loyalty, which can be divided into two classes:

attitudinal and behavioral. Attitudinal brand loyalty is a psychological construct, while behavioral brand loyalty is a substantive element (Cheng, 2011). In detail, attitudinal brand loyalty means that customers recommend the focal product to other customers (Kursunluoglu, 2011), whereas behavioral loyalty is a way of behaving, such as making repeated purchases (Cossío-Silva, Revilla-Camacho, Vega-Vázquez, & Palacios-Florencio, 2016); 3) brand awareness, which means a basic level of brand knowledge (Hoyer & Brown, 1990). Brand knowledge comprises brand awareness and brand image (Keller, 1998). Brand awareness is related to consumers' ability to recall or recognize a brand; in turn, brand image consists of consumers' perceptions and associations for the brand (Keller, 1998). The potential synergy of gamification with marketing is significant. Thus, in this paper, GMAs means applying gamification to marketing activities to increase customers' engagement and to encourage certain behaviors (Kuo & Chuang, 2016; Seaborn & Fels, 2015; Simões, Redondo, & Vilas, 2013), effectively deepening customer relationships.

In addition to linking gamification with service dominant logic, the gameful experience could be linked with hedonic usage patterns and consumption (Hirschman & Holbrook, 1982), as well as intrinsic (as opposed to extrinsic) motivations (Deci & Ryan, 1985) towards the use of information systems and services. Therefore, GMA can be viewed as an attempt to convert utilitarian services into more hedonically oriented ones. In terms of IS theory, this sits well in the long-run context of studying technology acceptance (Davis, 1989), continuous usage intentions (Bhattacherjee, 2001; Hsieh, Rai, & Keil, 2008), and especially the more recent understanding of the hedonic nature of novel services which has called for the measurement of more hedonic constructs, such as perceived enjoyment, flow, immediate feedback, clear goals (Csíkszentmihályi, 1990) and social comparison (Festinger, 1954). As such, gamification and GMA might offer an interesting vein for this continuum of research.

In principle, GMA differs from loyalty programs, although it is often used for pursuing similar goals. Most loyalty programs aim to offer economic benefits (redeemable by points) from the continuous use of services, most likely invoking extrinsic motivations. These, in turn, have been demonstrated to be detrimental to intrinsic motivations, autonomy and creativity (Deci, Koestner, & Ryan, 1999). Game mechanisms in themselves, however, do not provide economic benefits for users, but are believed to add value to a service via transformation of usage motivations and intentions (Huotari & Hamari, 2012). Thus, gamification is distinguished from traditional loyalty programs by offering added motivational and social benefits via user engagement rather than only expenditures (Blohm & Leimeister, 2013).

3. Literature review

3.1. Hedonic value vs. utilitarian value

Babin et al. (1994) indicated that consumers' perceived value is conceived as what consumers get for what they give. Butz and Goodstein (1996) defined consumers' perceived value as the emotional

attachment between a consumer experience and a producer after using a salient product or service provided by that supplier. Yoo, Lee, and Park (2010) mentioned that an economic or utilitarian approach is not sufficient to realize the intact picture of consumer value. Hirschman and Holbrook (1982) regarded consumers as either problem solvers or seekers of fun, fantasy, arousal, sensory stimulation, and enjoyment. In this case, the overall perception of consumer value is evaluated by using both utilitarian value and hedonic value. Perceived utilitarian value means the utilitarian aspect of consumer behavior, and in contrast, perceived hedonic value is related to the hedonic aspects of consumption behaviors (Babin et al., 1994). Specifically, shopping with utilitarian value (Childers, Carr, Peck, & Carson, 2002) versus shopping with hedonic value (Babin et al., 1994; Childers et al., 2002) represents this dichotomy. Numerous prior studies have indicated that hedonic and utilitarian value are most generally used in recent marketing literature (Babin et al., 1994; Jones, Reynolds, & Arnold, 2006; Park, 2004). Overby and Lee (2006) defined hedonic value as "an overall assessment of experiential benefits and sacrifices, such as entertainment and escapism", and defined utilitarian value as an overall assessment of functional benefits and sacrifices. Hence, Jarvenpaa and Todd (1997) and Teo (2001) indicated that utilitarian value includes more cognitive aspects of attitude, such as economic value for the money and judgments of convenience and time savings.

Past studies have investigated hedonic and utilitarian value in offline retailing (Jones et al., 2006; Kim & Han, 2011) and online retailing (Huang, 2003; Kim, Galliers, Shin, Ryoo, & Kim, 2012). Kim and Han (2011) adopted hedonic and utilitarian value to examine the relationships between perceived value and adoption intention. A product or service can satisfy customers' needs as well as lead them to experience excitement, pleasure, and a sense of personal well-being. Therefore, the nature of product or service experiences in offline or online retailing suggests that managers should consider both the hedonic and utilitarian aspects of customers' experiences. Customers have various motivations for purchasing products or services such as social interaction (Dawon, Bloch, & Ridway, 1990), fun (Venkatesh, 2000), and efficiency (Venkatesh & Brown, 2001). Based on these motivations, customers often perceive utilitarian value by comparing product or service quality with the money spent on the product itself and its services. Simultaneously, customers perceive hedonic value in relation to the enjoyment and excitement evoked while consuming a product or service. Thus, customers' perceptions of value regarding product or service experiences can be formed based on their evaluation of functional or economic benefits as well as emotional and affective factors. Accordingly, this study considers hedonic and utilitarian value as the major value dimensions for explaining customers' product experiences in the online context. Further, we also examine the relationships among perceived value, customer satisfaction, and desirable consumer behaviors.

Fig. 1 illustrates the research conceptual framework. This study suggests that it is important to explore the concepts of hedonic and utilitarian value in order to clarify customer satisfaction and positive desirable consumer behaviors in an online context. The detailed hypotheses and supporting literature are discussed in the following sections.
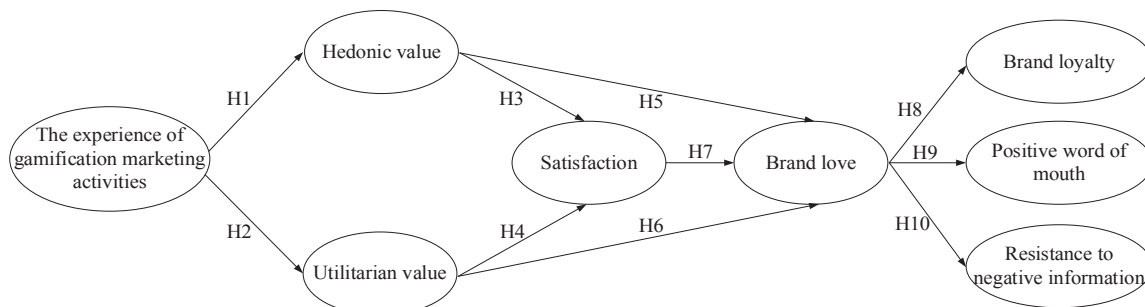

Fig. 1. The research model.

3.2. Satisfaction and brand love

Satisfaction is one of the cores of marketing theories, and it has been viewed as the key objective of marketing strategy for more than 60 years. Oliver (1999) defined satisfaction as a cognitive and emotional evaluation of the customer's experience with a product or service. Wirtz and Bateson (1999) also proposed that satisfaction consists of partly cognitive and partly affective evaluation of a customer's experience in service settings. Satisfaction incorporates cognitive judgments and affective reactions during consumption (Oliver, 1992). Satisfaction has taken a crucial and dominant position in marketing theory and practice because, as a main outcome of marketing activities, it transforms the initial consumption and purchase to post-purchase phenomena such as re-patronage and brand loyalty (Churchill & Surprenant, 1982). However, previous findings suggested that purely satisfying consumers might not be enough to maintain success in the competitive marketplace nowadays (Carroll & Ahuvia, 2006). Research has shown that brand love predicts consumer behavior better than traditional models related to satisfaction (Carroll & Ahuvia, 2006). Brand love is a relatively new marketing construct that helps in explaining and predicting variation in desirable post-consumption behaviors among satisfied consumers (Carroll & Ahuvia, 2006). Carroll and Ahuvia (2006, p. 81) defined brand love as "the degree of passionate emotional attachment a satisfied consumer has for a particular trade name". Based on the proposed love prototype by Ahuvia (2005), brand love comprises passion for a brand, attachment to the brand, positive valuation of the brand, positive emotions in response to the brand, and statements of love for the brand.

As discussed in Carroll and Ahuvia (2006), brand love differs from the satisfaction construct. Consistent with the idea of Fournier and Mick (1999) and Carroll and Ahuvia (2006), we conceptualized brand love as a mode of satisfaction, that is, a response experienced by some, but not all, satisfied consumers. Brand love is different from the satisfaction construct in several parts (Carroll & Ahuvia, 2006). To begin with, satisfaction is generally conceptualized as a cognitive judgment, but brand love has a much stronger affective focus. Furthermore, satisfaction is usually viewed as a transaction-specific outcome, but brand love is the consequence of a consumer's long-term relationship with the brand. In addition, satisfaction is often related to the expectancy disconfirmation paradigm, but brand love requires neither expectancy nor disconfirmation (e.g., the consumer experiences this emotional response to the brand in the absence of cognition; the consumer knows what to expect from the brand, so little, if any, disconfirmation takes place). Finally, brand love contains a willingness to express love (e.g., "I love this brand!") and involves integration of the brand into the consumer's identity, neither of which is requisite in satisfaction.

3.3. Desirable consumer behaviors

3.3.1. Brand loyalty

Oliver (1999, p. 34) defined loyalty as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior". Brand loyalty has been broadly discussed in the traditional marketing literature, with the central emphasis on two different dimensions, attitudinal and behavioral loyalty. Attitudinal brand loyalty is a multidimensional construct that includes affective, cognitive, and conative components (Oliver, 1997). As indicated by Van den Brink, Odekerken-Schroder, and Pauwels (2006), the affective component means positive or negative emotions that consumers have towards a brand; the cognitive component implies particular knowledge regarding the brand. The conative component is concerned with consumers' behavioral disposition or an intention to buy the brand. Behavioral loyalty captures more the patronage behavior and emphasizes repeated purchasing of a certain brand by a

customer over time (Bloemer & Kasper, 1995). However, despite agreement that brand loyalty results in repeated purchasing, Van den Brink et al. (2006) indicated that this may not be its sole antecedent. Furthermore, Quester and Lim (2003) proposed that the underlying motivations for repeated purchasing remain unknown. Van den Brink et al. (2006) pointed out that patronage actually may emerge from alternative consumer motivations and dispositions, and the attitudinal conceptualization of brand loyalty. Additionally, Fournier and Yao (1997) indicated that both attitudinal and behavioral components of brand loyalty obtained strong advantage in the current literature. In short, the definition of brand loyalty includes both attitudinal and behavioral concepts, yet limited empirical studies have included both dimensions. Thus, this study uses the concept of Dick and Basu (1994) – specifically, customer loyalty is the outcome of psychological processes and has behavioral displays, and should therefore include both attitudinal and behavioral components. Consequently, the research model advanced here attempts to empirically link attitudinal and behavioral loyalty in an online shopping context.

3.3.2. Positive word-of-mouth

Word-of-mouth has been confirmed to be a trustworthy and influential source of information (Higie, Feick, & Price, 1987). Word-of-mouth offers important information concerning a firm to consumers that often assists consumers in deciding whether or not to patronize a firm (Yoo, Kim, & Sanders, 2015). Following this, word-of-mouth may be helpful in provoking a brand switch, and thereby help a firm in acquiring new customers. East, Hammond, and Lomax (2008) indicated that positive word-of-mouth encourages brand choice, and in contrast, negative word-of-mouth discourages brand choice. Westbrook (1987) defined positive word-of-mouth as the degree to which the consumer communicates praise of the brand to others. Holt (1997) proposed that talking about a brand with other people is a critical part of identity construction, and a high level of word-of-mouth should also be associated with brand love. Carroll and Ahuvia (2006) found that brand love, in turn, is linked to a higher positive word-of-mouth level. More precisely, their findings suggested that satisfied consumers are inclined to engage in more positive word-of-mouth. Batra, Ahuvia, and Bagozzi (2012) also confirmed that positive word-of-mouth is an important consequence of brand love. Thus, this study takes positive word-of-mouth as one of the outcomes of brand love.

3.3.3. Resistance to negative information

Eisingerich, Rubera, Seifert, and Bhardwaj (2011) defined resistance to negative information as "the extent to which consumers do not allow negative information to diminish their general view of a firm — thus [it] may indicate the strength of a consumer-firm relationship". This argument is in line with the work of Aaker, Fournier, and Brasel (2004), which demonstrates that a strong relationship between consumers and a firm enables consumers to show resistance to negative information. Van Lange et al. (1997) have shown that individuals are able to build a strong relationship with exchange partners and demonstrate restorative relationship maintenance behaviors. In marketing, researchers have successfully demonstrated that consumer-firm relationships can extend beyond person-to-person interactions (Eisingerich et al., 2011). As stated by many researchers (Escalas & Bettman, 2003; Fedorikhin, Park, & Thomson, 2008; Park, MacInnis, Priester, Eisingerich, & Iacobucci, 2010), consumers can develop relationships with firms, brands, and special or favorite objects. Finkel, Rusbult, Kumashiro, and Hannon (2002) indicated that strong cognitive and affective attachment have been shown to affect forgiveness based on a desire to continue a relationship, and that they affect individuals' likelihood of making situational (as opposed to dispositional) attributions to explain relationship mishaps, which lessens the impact of relationship transgressions (Aron, Tudor, & Nelson, 1991). Thus, strong consumer-firm relationships may be at the heart of consumers' resistance to negative information (Eisingerich et al., 2011). We turn to exchange

theory to investigate potential drivers of consumers' resistance to negative information. Restricted exchange means two-party reciprocal relationships between consumers and a firm (Bagozzi, 1975). Individuals perceive justice or fairness of an exchange between themselves and other parties in terms of weighed justice inputs (e.g., time, effort, and opportunity cost associated with exchange) versus justice outcomes (e.g., service outcomes including marginal utility and rewards) (Deutsch, 1985). This suggests that individuals perceive injustice when they believe that justice inputs outweigh justice outcomes. Individuals are less likely to go out of their way when an exchange is perceived as unjust (Maxham & Netemeyer, 2003). The relationships consumers have with a firm tend to be based not only on their current and past information about it but also on potential future information (Lemon, White, & Winer, 2002).

4. Hypotheses and research model

Marketing aims to develop communication by which a firm is able to enlighten customers about its products and services and generate interest in its offerings (Kim & Ko, 2012). Marketing is viewed as a multidimensional process made up of various strategies; however, a main goal of any marketing strategy is to enhance sales and profitability. Marketing is an investment and enables the improvement of customer value (Kim & Ko, 2012). Additionally, Hofacker et al. (2016) indicated that gamification means the use of game design elements to increase the sales of non-game goods and services by enhancing customer value. Gamification means a process of improving a service with affordances for gameful experiences to support users' overall value creation (Huotari & Hamari, 2017). Gamification can create both epistemic value and social value (Nambisan & Baron, 2009). The former can be created by the cognitive benefits of skill development, information acquisition, and learning, expanding users' knowledge and expertise. The latter can be created by interaction involving appreciation, compliments, and reciprocal exchange with others, and thus creating an atmosphere of camaraderie, building social bonds, and facilitating future interactions (with both the brand and other consumers). Gamification can be a value adding way to encourage and maintain participation (Feng, Ye, Yu, Yang, & Cui, 2018). In addition, some studies (e.g., Deterding et al., 2011; Huotari & Hamari, 2012) have shown that gamification can create positive value for consumers with more motivating and rewarding experiences offered by the game design elements. Hsu and Chen (2018) also revealed that gamification experience has a significant and positive influence on the value of a product or service. Gamification adds value by enhancing the enjoyment of consumer experience when conducting the behavior, thus raising intrinsic motivation (Jung, Schneider, & Valacich, 2010). Because a brand's engagement in gamification is taken as a marketing activity to build a relationship with customers and increase corporate profits, brands' gamification activity is expected to positively affect the drivers of customers' value. Thus, the following two hypotheses are developed.

H1. The experience of GMAs will positively influence hedonic value.

H2. The experience of GMAs will positively influence utilitarian value.

Owing to satisfaction as an evaluative outcome (Deng, Turner, Gehling, & Prince, 2010), Shin (2017) suggested that the evaluation of utilitarian and hedonic value is the direct antecedent of satisfaction. Numerous marketing researchers (e.g., Babin et al., 1994; Jones et al., 2006) have investigated perceived value by taking it as an antecedent of satisfaction, and have found a strong association between satisfaction and both hedonic and utilitarian value, suggesting that both kinds of value have a positive impact on customer satisfaction (Babin et al., 1994; Jones et al., 2006). Offline shopping research has confirmed that value judgment positively affects satisfaction (Cronin, Brady, & Hult, 2000). Additionally, some studies (e.g., Babin et al., 1994; Guo, Xiao,

Toorn, Lai, & Seo, 2016; Jones et al., 2006; Shin, 2017) have shown linkages between satisfaction and both hedonic and utilitarian value. Thus, the following two hypotheses are developed.

H3. The hedonic value of experience of GMAs will positively influence customer satisfaction.

H4. The utilitarian value of experience of GMAs will positively influence customer satisfaction.

Consumer value has been identified as one of the key factors to successful business (Zeithaml, 1988) because consumers choose products or services based on their various types of value such as functional, social, emotional, epistemic, and conditional value (Sheth, Newman, & Gross, 1991). Given the various forms of shopping value, one has to question how judgment of value affects consumers' evaluations. Two value dimensions seem to be most universal, namely, hedonic and utilitarian value (Babin et al., 1994). Some previous studies (e.g., Etemad-Sajadi & Ghachem, 2015; Overby & Lee, 2006) have revealed that hedonic and utilitarian value have an obvious impact on the perception of Internet users. Hedonic value focuses on fun, entertainment, playfulness, and emotional significance (Babin et al., 1994), whereas utilitarian value focuses on the efficiency of obtaining the desired information on a website (Childers et al., 2002), and includes more cognitive aspects of attitude, such as economic "value for the money" (Zeithaml, 1988).

Value judgment positively influences preference (Cronin et al., 2000), and preference signifies the disposition of a shopper to favor a specific retailer. Batra et al. (2012) indicated that an individual cannot feel love towards a brand without the brand being liked and valued highly. Overby and Lee (2006) have found that hedonic and utilitarian value have a significant positive impact on love for Internet retailers. Brand love may be affected by product or brand characteristics such as hedonic features. For a hedonic product, fun, pleasure or enjoyment are primary benefits (Drennan et al., 2015), and for a utilitarian product, this is more reasoned, and more focused on reaching a goal or accomplishing a task (Cramer & Antonides, 2011). Customers' perception of hedonic value tends to cause stronger emotional responses such as love towards products. Carroll and Ahuvia (2006) found that consumers' hedonic perception has a positive effect on brand love. In addition, Batra et al. (2012) found that marketing in establishing brand meanings that connect to deeply held value can facilitate consumers' experience of brand love. We suggest that utilitarian and hedonic value will have a direct and positive impact on love for the retailer. Thus, the following two hypotheses are developed.

H5. Hedonic value has a positive effect on brand love.

H6. Utilitarian value has a positive effect on brand love.

We expect that satisfaction also influences customers' brand love directly. Talking about satisfaction is a crucial part of the process by which customers love brands (Albert, Merunka, & Valette-Florence, 2008). Previous studies (e.g., Aro, Suomi, & Saraniemi, 2018; Drennan et al., 2015) showed that customer satisfaction have a positive effect on brand love. As such, customers are expected to increase their brand love when the extent of their satisfaction is higher.

H7. Customer satisfaction will positively influence brand love.

Satisfied customers' brand love is expected to increase both understanding and prediction of their post-consumption behavior. More specifically, this work hypothesizes positive direct effects of brand love on brand loyalty, positive word-of-mouth, and resistance to negative information in a population of satisfied customers. Love is supposed to affect future consumer outcomes, including intentions, willingness to buy, and word-of-mouth (Bagozzi, 1992). Some studies (e.g., Aro et al., 2018; Batra et al., 2012; Carroll & Ahuvia, 2006) showed that satisfied customers have a tendency to be more loyal to a brand and to undertake more positive word-of-mouth about the brand. Furthermore, Drennan

et al. (2015) and Aro et al. (2018) found that satisfied customers have a positive impact on brand love, and in turn, have a positive impact on brand loyalty. Additionally, Ahearne, Bhattacharya, and Green (2005) found that a beloved brand is integrated into the consumer's identity, and people are naturally inclined to resist negative information about the brand. Turgut and Gultekin (2015) also confirmed that brand love positively and significantly affects resistance to negative information and repurchase intention. In short, satisfied customers who also love a brand are expected to be more committed to repurchase, be more eager to spread "the good word" to others, and have stronger resistance to negative information. Thus, the following three hypotheses are developed.

H8. Brand love has a positive effect on brand loyalty.

H9. Brand love has a positive effect on positive word-of-mouth.

H10. . Brand love has a positive effect on resistance to negative information.

Finally, the research model is schematically illustrated in Fig. 1.

5. Research methodology

5.1. The design of GMAs for an online bookstore

The GMAs for an online bookstore are designed based on the definition of gamification and prior literature (e.g. Hamari, 2017; Hanus & Fox, 2015). Specifically, as defined by Hofacker et al. (2016, p. 26), gamification means "*the use of game design elements to enhance non-game goods and services by increasing customer value and encouraging value-creating behaviors such as increased consumption, greater loyalty, engagement, or product advocacy*". The perceived value is important in a gamification context. Furthermore, within the gamification context, users are often interested in a task (e.g. reading) with a badge system. They receive a badge for viewing and showing information to others, and can realize the requirements for getting a badge. Thus, they are not surprised when they earn one. As Hamari et al. (2014) indicated, badges have been one of the most common mechanics explored in gamification studies, and have been investigated in a variety of contexts. Thus, we develop the GMAs for an online bookstore, as follows.

A certain online bookstore has recently advertised an activity known as "My Thoughts on This Book". Online members use the format of "company name Talk @ book name" to serve as a headline and post their thoughts on best-selling books on the Facebook fan page of the online bookstore. The online bookstore then calculates the amount of "approval, feedback, and sharing" activity for this book. Specifically, in terms of the same best-selling book, if an online member gathers the most "approval, feedback, and sharing," he/she obtains a coupon equivalent to the sale price of this book as a reward in the form of store credit. (Note: If a certain member responds using two or more methods, the number of responses is recorded as one.) The online bookstore advertises as follows the activity of "My Customer Feedback."

1. Log in to the website; the online member gets a badge (only once per day).
2. If the value of merchandise purchased is over NTD 1000 (USD 30), the member gets a badge.
3. If the online member recommends merchandise to his/her relatives, friends, or colleagues, he/she receives a badge.
4. If the online member recommends items to his/her relatives, friends, or colleagues, and they actually make purchases, the member gets a badge.
5. If the online member can gather the most responses of 'approval, feedback, and sharing', the member receives a badge.
6. If the online member visits the website to reach a multiple of 1000 (2,000, 3,000, 4000 …) visitor, he/she receives a badge.
7. At the end of each month, if a member is in the top ten members

based on the number of badges, he/she is awarded a badge.
8. If a member collects 200 badges, he/she is awarded an additional badge.
9. If a member's total number of badges reaches a multiple of 200, he/she receives another badge.

5.2. Instrument development

The constructs of this study are developed based on prevalidated measures. All scale items are rephrased to relate specifically to the context of an online bookstore. The two-item scale of entertainment and trendiness is adapted from measures developed by Kim and Ko (2012). Interaction is also measured using a three-item scale adapted from Kim and Ko (2012). Intimacy is measured using a five-item scale adapted from Chelune and Waring (1984) and Tomasi (2007). To analyze novelty, four items are adopted from Huang (2003). The scales of hedonic value and utilitarian value, consisting of four items each, are adapted from Overby and Lee (2006). The three items of satisfaction, which measure user perceptions related to online bookstore usage, are adapted from Maxham and Netemeyer (2003). The brand love scale consists of ten items adapted from Carroll and Ahuvia (2006). The positive word-of-mouth scale comprises four items taken from Maxham and Netemeyer (2002). Brand loyalty is measured by using a four-item scale adapted from Carroll and Ahuvia (2006). The scale of resistance to negative information consists of four items taken from Eisingerich et al. (2011). All constructs are measured by using multiple items and use fully anchored, seven-point, Likert-type scales ranging from "strongly disagree" to "strongly agree".

Consistent with the way of Liao, Lin, Luo, and Chea (2016), to ensure precision and clarity, a preliminary version of the instrument was reviewed by two doctoral students and three experts in the e-commerce field. Subsequently, the instrument was pretested and administered to 47 selected respondents of different genders, ages, and levels of education to verify appropriateness and comprehensiveness. Each respondent had more than 3 years of experience in online shopping. In this way, the content validity of the instruments was evaluated. None of these phases revealed any significant problems. Additionally, consistent with the way of Yan, Wang, Chen, and Zhang (2016), after the initial survey refinement, we performed a pilot test with 47 responses to ensure the acceptable reliability and validity of the instrument. SPSS Statistics Version 20 was used to check the reliability. Cronbach's alpha of each variable, as well as the entire questionnaire, is greater than the recommended 0.70 level.

Moreover, we conducted exploratory factor analysis to measure convergent and discriminant validity of the items. We first checked KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) and Bartlett's test of sphericity, and the results confirm that the collected data are suitable for factor analysis.

Then, we measured the validity of the questionnaire by checking the factor loadings, cross loadings, and the average variance extracted (AVE). The factor loadings for each indicator on its corresponding construct are greater than 0.70 and higher than the factor loadings on other constructs, thus supporting convergent validity. For each construct, the average variance extracted is greater than 0.5, suggesting that the explained variance is more than the unexplained variance (Jalilvand, Samiei, Dini, & Manzari, 2012). The final measures obtained from the pilot test were used as indicator variables for the main study, and the final version of the questionnaire items is presented in the Appendix.

5.3. Sample and procedure

Subjects for this study were experienced online bookstore purchasers. To better target the desired subjects and maximize the sample size, consistent with the method of Hajli (2014), a paper- and web-based survey questionnaire were used to collect data from volunteers.

The online version of the questionnaire was set up on a survey portal (mySurvey.tw). In designing the webpage for the questionnaire, we considered different issues to attract participants to become involved in the research; these included good graphic design and an easy to navigate questionnaire, as well as distribution throughout many forum and online communities such as Facebook. The goal was to attract a variety of participants to this research.

In addition, as many people use online bookstores in Taiwan, a convenience sampling approach was used to collect data from individual volunteers in Taiwan. This approach has also been recommended for a quantitative method. Furthermore, consistent with the method of Hsu, Chen, Chang, and Chao (2010), data for the main study were collected in Taiwan in 2015 by asking respondents who had experienced online bookstore purchasing within a one-year period to complete paper questionnaires or inviting them by email to participate in an online version of the questionnaire. To investigate respondents' perceptions of value, satisfaction, and brand love in a gamification context, selecting only respondents who have experienced online bookstore purchasing within a one-year period is judicious, because such respondents are likely to have clearer recall of their experience with online bookstores. Before conducting the survey questionnaire, all respondents were first asked to read the design of GMAs for the online bookstore for about 10 min, and then to complete the survey questionnaire. From emails and paper questionnaires distributed through different channels, 250 responses were received. Of those, 242 effective questionnaires were prepared for data analysis; 134 were online and 108 were paper versions.

Additionally, consistent with the method of Wang, Wang, and Liu (2016), we evaluate potential non-response bias by comparing the early respondents with later ones based on demographic variables, including gender, age, level of education, and monthly income using independent sample t tests. No significant difference is found between the early and the later responses for gender (p = 0.43), age (p = 0.25), or level of education (p = 0.36). The constructs of interest for early and late respondents are also compared utilizing an independent samples t test. No significant difference is found between the early and the later responses for the constructs of interest, including entertainment (p = 0.33), interaction (p = 0.26), trendiness (p = 0.15), intimacy (p = 0.28), novelty (p = 0.19), hedonic value (p = 0.59), utilitarian value (p = 0.44), satisfaction (p = 0.42), brand love (p = 0.34), positive word-of-mouth (p = 0.58), brand loyalty (p = 0.39), or resistance to negative information (p = 0.16).

We also evaluate the overall homogeneity of the sample by comparing respondents from the two different questionnaire surveys based on demographic variables and the constructs of interest using an independent sample t test (Hair, Black Babin, and Anderson, 2010). The results show that there are no statistically significant differences between these two different questionnaire surveys in terms of demographic variables, including gender (p = 0.53), age (p = 0.47), or level of education (p = 0.65), or in the constructs of interest, including entertainment (p = 0.41), interaction (p = 0.36), trendiness (p = 0.55), intimacy (p = 0.34), novelty (p = 0.29), hedonic value (p = 0.64), utilitarian value (p = 0.58), satisfaction (p = 0.40), brand love (p = 0.46), positive word-of-mouth (p = 0.30), brand loyalty (p = 0.60), or resistance to negative information (p = 0.27). These results show that the 242 valid survey responses can be used as a single sample in the following analysis. The demographics of valid respondents are presented in Table 1.

6. Data analysis and results

Statistical software SPSS 18.0 and Smart PLS 2.0 M3 are used for the analyses. With SPSS 18.0, descriptive analysis is applied to analyze the results of the pretest and to collect the demographic characteristics of the sample, and Cronbach's α is adopted to test the reliability. Using PLS, the measurement model is first analyzed to measure reliability and validity, and the structural model is then tested.

Table 1
Demographic statistics (sample size: 242).

Characteristics	Distribution (%)
Gender	
Male	155
Female	87
Age	
< =25	95
26-30	58
31-35	36
> =36	53
Education level (completed)	
High school or below	15
College	169
Graduate school or above	58
Occupation	
Public servant	27
Manufacturing	16
Business	71
Professional	14
Unemployed (e.g. student, retired, housewife)	114
Marital status	
Married	141
Single	101
Income	
< =NT$20,000	153
NT$20,001- NT$30,000	21
NT$30,001- NT$40,000	41
NT$40,001- NT$50,000	15
NT$50,001- NT$60,000	4
> NT$60,000	8

6.1. Manipulation check of GMAs

To measure how successfully this study manipulated the design of GMAs for the online bookstore, the participants were asked to indicate the extent to which they found the following four items interesting (1 and 2) or valuable (3 and 4): (1) participating in the activity of My Thoughts on This Book, (2) participating in the activity of My Customer Feedback, (3) participating in the activity of "My Thoughts on This Book" and obtaining a financial reward, and (4) participating in the activity of "My Customer Feedback" and obtaining a free book reward. The results show that participants had higher agreement on the experience of GMAs for the online bookstore; thus, the design of GMAs for the online bookstore is an appropriate subject of this study.

6.2. Constructs of perceived GMAs

In advance of examining the impact of GMAs on desirable consumer behaviors, the constructs of GMAs are perceived by consumers. Consistent with the study of Kim and Ko (2012), confirmatory factor analysis (CFA) is conducted because the dimensions of GMAs are not obviously distinctive according to exploratory factor analysis. Cronbach's α of constructs is assessed to show internal consistency of each variable. First, a model to test the validity of the activities finds satisfactory fit with the data: χ^2 = 601.35, χ^2/df = 2.23, GFI = 0.92, AGFI = 0.89, CFI = 0.98, NFI = 0.96, SRMR = 0.041 and RMSEA = 0.050. Thus, the five constructs of GMAs are confirmed.

The factor loading of the construct of entertainment is 0.86 and 0.84, with a high Cronbach's α of 0.87. Factor loadings of interaction range from 0.80 to 0.87, with a Cronbach's α of 0.82. Factor loadings of trendiness ranged from 0.88 to 0.92, with a Cronbach's α of 0.90. Factor loadings of intimacy range from 0.80 to 0.88, with a Cronbach's α of five items at 0.86. Factor loadings of intimacy range from 0.81 to 0.90, with a Cronbach's α of four items at 0.89. The standardized factor loadings of all items in the model are significant ($p < 0.001$).

The result shows that any such online bookstore marketing activity using gamification mechanisms entertains customers by offering rewards and social network activity, and enables customized information

searching. GMAs create interaction among users that can lead to intimacy effects and include fashion and trend attributes. Contrary to current marketing activities that appeal directly to the value of real products or services, GMAs focus more on hedonic and empirical value that can be gotten by indirect user experience.

6.3. Measurement model analysis

To measure the instrument validation and test the structural model, this study uses Partial Least Squares (PLS), a commonly used structural equation modeling method, through SmartPLS (Ringle, Wende, & Will, 2005). The PLS structure modeling test technique is able to handle a small sample and complex predictive model testing with no restriction of normal distribution (Chin, 1998a). Furthermore, as indicated by Lohmoller (1989), PLS allows the researcher to test the relationship within the measures (the measurement model) and the hypothesized relationships between the measures (the structural model) simultaneously. Additionally, PLS is more appropriate for predictive applications and theory building (Chin, 1997). To ensure the proper use of this technique, this study follows the general procedures indicated by Chin (1998b).

The data are evaluated by using tests of convergent validity, discriminant validity, and reliability using commonly accepted guidelines. The data are first analyzed with the initial construct validity tests. This paper examines factor loadings of variables to examine whether items are loaded cleanly on separate components and to find evidence of cross-loading among items.

As all of the scales used in this research model are reflective in nature, multi-item scales are used to measure the constructs. Exploratory factor analysis is conducted to view item loadings, cross-loadings, and average variance extracted (AVE). To assess the consistency across multiple items, a convergent validity test is performed. Convergent validity is confirmed when the items load much higher on their hypothesized construct than any other constructs (Herath & Rao, 2009; Loch, Straub, & Kamel, 2003). All items have a loading above the threshold of 0.7 (Chin, Marcolin, & Newsted, 2003), and show convergent validity (see Table 2). AVE exceeding the threshold of 0.5 for all constructs is used in the study (Fornell & Larcker, 1981).

Discriminant validity is established when the square root of AVE for each construct is greater than the inter-construct correlation corresponding with diagonal correlations of the construct to their latent variables (Loch et al., 2003). As shown in Table 3, the square roots of AVE for all the constructs are greater than all other inter-construct correlations.

To analyze reliability of the measurement model, the initial reliability scores from SmartPLS are obtained. The Cronbach's alpha and composite reliability are examined to ascertain the internal consistency among the data. While Cronbach's alpha provides a lower bound estimate of the internal consistency, the composite reliability is a more demanding estimate of reliability (Chin & Gopal, 1995). A score greater than 0.70 is acceptable for the composite reliability scores of the reflective variables for each construct (Gefen & Straub, 2005). As shown in Table 4, each construct has a Cronbach's alpha and composite reliability greater than 0.7. Also, as proposed by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), the observed relationships are potentially affected by common method bias (CMB) because of the self-reported nature of collected data. The Harman's one-factor test shows that the first construct only accounts for 31.69% of the variance, indicating that CMB is unlikely to be of serious concern (Podsakoff & Organ, 1986).

Next, to check whether the measurement model has a good fit with the collected data, this study also conducts confirmatory factor analysis. Consistent with structural equation modeling recommendations, this study uses covariance matrices of observed variables as input, and evaluates overall fit based on a χ^2 goodness-of-fit test, GFI (goodness-of-fit index), AGFI (adjusted goodness-of-fit statistic), CFI (comparative-

Table 2
Loadings and AVEs.

Construct	Factor loadings	AVE
Entertainment (ENT)		0.68
ENT1	0.8124	
ENT2	0.7985	
Interaction (INT)		0.71
INT1	0.8421	
INT2	0.8354	
INT3	0.7888	
Trendiness (TRE)		0.73
TRE1	0.8944	
TRE2	0.8564	
Intimacy (INTI)		0.78
INTI1	0.8111	
INTI2	0.8234	
INTI3	0.8755	
INTI4	0.7998	
INTI5	0.8001	
Novelty (NOV)		0.74
NOV1	0.8897	
NOV2	0.8546	
NOV3	0.8744	
NOV4	0.8032	
Hedonic value (HV)		0.69
HV1	0.8412	
HV2	0.8028	
HV3	0.8433	
HV4	0.8222	
Utilitarian value (UV)		0.66
UV1	0.8637	
UV2	0.8913	
UV3	0.8678	
UV4	0.8321	
Satisfaction (SAT)		0.67
SAT1	0.8811	
SAT2	0.8097	
SAT3	0.8169	
Brand love (BL)		0.66
BL1	0.8713	
BL2	0.8764	
BL3	0.8845	
BL4	0.8099	
BL5	0.8571	
BL6	0.8609	
BL7	0.8755	
BL8	0.8691	
BL9	0.8741	
BL10	0.8594	
Brand loyalty (BLY)		0.70
BLY1	0.8777	
BLY2	0.8699	
BLY3	0.8289	
BLY4	0.8369	
Positive word-of-mouth (POWM)		0.71
POWM1	0.8753	
POWM2	0.8412	
POWM3	0.8521	
POWM4	0.8439	
Resistance to negative information (RNI)		0.68
RNI1	0.8794	
RNI2	0.8911	
RNI3	0.8654	
RNI4	0.8321	

fit index), NFI (normed-fit index), SRMR (standardized root mean square residual), and RMSEA (root-mean square error of approximation). The results of confirmatory factor analysis show that the measurement model fits the data well, $\chi^2 = 587.24$, $\chi^2/df = 2.17$, GFI = 0.90, AGFI = 0.86, CFI = 0.96, NFI = 0.94, SRMR = 0.043 and RMSEA = 0.056. All the model-fit indices exceed the acceptance levels, indicating that the measurement model has a good fit with the collected data.

Table 3
Discriminant validity analysis.

	ENT	INT	TRE	INTI	NOV	HV	UV	SAT	BL	BLY	PWOM	RNI
ENT	0.852											
INT	0.265	0.812										
TRE	0.365	0.512	0.823									
INTI	0.254	0.336	0.269	0.814								
NOV	0.412	0.367	0.369	0.354	0.822							
HV	0.336	0.367	0.412	0.367	0.412	0.841						
UV	0.365	0.512	0.323	0.336	0.367	0.412	0.833					
SAT	0.369	0.365	0.512	0.365	0.512	0.323	0.369	0.823				
BL	0.357	0.254	0.336	0.367	0.412	0.284	0.357	0.378	0.815			
BLY	0.385	0.354	0.365	0.512	0.323	0.365	0.512	0.323	0.512	0.822		
PWOM	0.299	0.365	0.254	0.336	0.269	0.254	0.336	0.269	0.336	0.416	0.814	
RNI	0.384	0.254	0.412	0.367	0.369	0.412	0.367	0.369	0.387	0.411	0.319	0.811

Note: The diagonal means the square root of AVE.

Table 4
Reliability analysis.

Construct	Composite reliability	Cronbach's α
GMA		
ENT	0.8896	0.8356
INT	0.8795	0.8198
TRE	0.9253	0.8865
INTI	0.8798	0.8564
NOV	0.8875	0.8611
HV	0.8756	0.8536
UA	0.9021	0.8745
SAT	0.8879	0.8597
BL	0.8964	0.8722
BLY	0.9169	0.8814
PWOM	0.9012	0.8758
RNI	0.8876	0.8611

6.4. Structural model analysis

The path of the structural model is evaluated by using the bootstrapping function of Smart-PLS 2.0 M3 with 5000 iterations. The summary of path results, corresponding *t*-values and the estimated *p*-value associated with each *t*-value is presented in Table 5, which shows that all paths are significant at the 0.05 level. Namely, all proposed hypotheses are supported. Furthermore, by examining how the model fits, R^2 values show that almost 48% of variance in the consumer desirable behavior is contributed by brand love, meaning that consumer desirable behavior is affected by brand love. The R^2 for brand love means that almost 64% of variance in relationship quality is contributed by customer satisfaction, utilitarian value, and hedonic value.

Hence, the results indicate that the model has a satisfactory level of explanatory power.

7. Conclusions

7.1. Summary and discussion

Given the importance of GMAs to online bookstores, understanding ways to increase desirable consumer behaviors is a crucial part of a successful online marketing strategy. Although behavioral intentions and behaviors have been investigated in the online bookstore context (Lin, 2007), very few studies have discussed desirable consumer behaviors in the GMAs context. The findings of this study fill this gap by showing the significant effects of experience of GMAs on desirable consumer behaviors. Specifically, this is the first study to investigate the experience of GMAs including the five elements of entertainment, interaction, trendiness, intimacy, and novelty, and we theoretically and empirically demonstrate that the experience of GMAs has particular effects on desirable consumer behaviors.

Second, the current study extends existing knowledge of online bookstores and contributes to the gamification marketing field. However, the ability of gamification to elicit desirable consumer behaviors, particularly in the GMA context, has yet to be formally assessed. This study theoretically and empirically demonstrates that the experience of GMAs is effective in explaining the subsequent desirable consumer behaviors. Thus, this study extends GMA to the field of desirable consumer behaviors and provides an insightful theoretical lens for future research.

Third, for the further exploration of the desirable consumer

Table 5
Results of structural model.

Path	Expected sign	Path coefficient (β)	*t*-value	Sig.	Relevant hypothesis
Experience of GMAs→HV	+	0.425	5.631	0.000	H1 is supported
Experience of GMAs→UV	+	0.356	4.025	0.000	H2 is supported
HV→CS	+	0.510	6.574	0.000	H3 is supported
UV→CS	+	0.467	5.986	0.000	H4 is supported
HV→BL	+	0.397	4.428	0.000	H5 is supported
UV→BL	+	0.285	3.971	0.000	H6 is supported
CS→BL	+	0.412	5.518	0.000	H7 is supported
BL→BLY	+	0.532	6.988	0.000	H8 is supported
BL→PWOM	+	0.573	7.219	0.000	H9 is supported
BL→RNI	+	0.486	6.055	0.000	H10 is supported

behaviors of online bookstores, the current study also contributes to the field of marketing for online bookstores by investigating the important role of brand love. Specifically, this study identifies the relationships between antecedents (i.e., utilitarian and hedonic value) and consequences (i.e., desirable consumer behaviors) of brand love in an online gamification marketing context. Although prior literature has explored the antecedents and consequences of brand love (Carroll & Ahuvia, 2006), to the best of our knowledge, this study is the first to empirically investigate the original five factors of experience of GMAs, especially in the online bookstore context. Our inclusion of the utilitarian and hedonic value contributes to the GMA context by demonstrating the mediating effects of utilitarian and hedonic value between GMAs and brand love.

7.2. Managerial implications

The findings of this study provide several practical implications for investment in and design and marketing of gamification. First, the results show that GMAs reliably influence utilitarian and hedonic value, and indirectly influence satisfaction, brand love, and ultimately desirable consumer behaviors through utilitarian and hedonic value. Hence, the research model provides much needed guidance about the complex interrelationship among GMAs, user's perceptions of value, satisfaction, brand love, and desirable consumer behaviors. The research model also provides a mechanism for understanding the relative impact of detailed GMAs, which provides important direction for managers of online businesses. For example, the proposed model can help managers of online businesses understand the effects of GMAs on desirable consumer behaviors. Based on this understanding, managers of online businesses can consider the design of GMAs and determine what kinds of changes have the most meaningful impacts on potential consumers. In summary, this study increases the possibility that online retailers can use gamification strategies to better manage "desirable" consumer behavior. In the early stages of establishing a relationship with their customers, marketing managers should pay considerable attention to GMAs. GMAs should incorporate the mechanics of gaming, applied to a non-game context, to change customers' participation and engagement behaviors. Moreover, to maximize the payoff from GMA investments, companies need to assess their current marketing campaigns and examine their effects on users' perceptions and behaviors.

8. Limitations and directions for future research

This study has several limitations which offer possible suggestions for future research. First, the use of a limited market sample and industry category (i.e., online bookstore) limits the generalizability of these findings to other service contexts. Thus, future studies might examine the research model's applicability to other service contexts, such as e-banking and online booking services, to assess the generalizability of these findings. Second, although the five constructs of perceived GMAs were derived from prior literature, and their validity was confirmed in this study, discovering other dimensions could be necessary in other contexts and with different types of consumers (Rodrigues et al., 2016). Third, the experiment was a makeshift service in which respondents were asked to undertake a hypothetical scenario of a badge system, and they were aware of the temporary nature of the service. As indicated by Koivisto and Hamari (2014), using self-reported data might potentially reflect novel and glorified attitudes towards the idea of using game mechanics. Thus, future studies might consider conducting a field experiment in a real existing service to achieve a higher level of validity. Finally, empirical findings in this study were drawn from a sample of Taiwanese online bookstore customers, who are innovative in use of technology and are fans of bookstore brands. However, Western consumers mostly use bookstore brands' social media due to the challenges in language. Even though Taiwan is a test market for online bookstores in the Asian market, it is necessary to replicate this study's findings with customers of alternative online bookstore brands.

Appendix. scale items

Construct	Adapted item	Citation
Entertainment	ENT1. Participating in Internet bookstore activities and obtaining rewards (e.g., books or money) is fun. ENT2. Activity contents shown in Internet bookstores seem interesting.	Kim and Ko (2012)
Interaction	INT1. The Facebook page of the Internet bookstore enables information sharing with others. INT2. Conversations or opinion exchanges with others are possible through the Facebook page of the Internet bookstore. INT3. It is easy to deliver my opinion through the Facebook page of the Internet bookstore.	Kim and Ko (2012)
Trendiness	TRE1. Contents (e.g., activities or products) shown in the Internet bookstore are the latest information. TRE2. Purchasing from the Internet bookstore is very trendy.	Kim and Ko (2012)
Intimacy	INTI1. I enjoy my time at the Internet bookstore and feel at ease. INTI2. I think of the Internet bookstore as a friend. INIT3. I choose the Internet bookstore without any hesitation when purchasing goods on the Internet. INTI4. I feel a sense of intimacy with the Internet bookstore. INTI5. I feel purchasing goods from the Internet bookstore is a very important part of my consumption life	Chelune and Waring (1984) and Tomasi (2007)
Novelty	NOV1. The Internet bookstore is imaginative. NOV2. The Internet bookstore is surprising. NOV3. The Internet bookstore is innovative. NOV4. The Internet bookstore is new.	Huang (2003)

Hedonic value	HV1. Making a purchase from the Internet bookstore totally absorbs me.	Overby and Lee (2006)
	HV2. This Internet bookstore doesn't just sell product or services—it entertains me.	
	HV3. Making a purchase from the Internet bookstore "gets me away from it all."	
	HV4. Making a purchase from the Internet bookstore truly feels like an "escape."	
Utilitarian value	UV1. The prices of the products and/or services I purchased from the Internet bookstore are at the right level, given the quality.	Overby and Lee (2006)
	UV2. When I make a purchase from the Internet bookstore, I save time.	
	UV3. The products and/or services I purchased from the Internet bookstore were a good buy.	
	UV4. This Internet bookstore offers a good economic value.	
Satisfaction	SAT1. I am satisfied with the Internet bookstore.	Maxham and Netemeyer (2003)
	SAT2. Overall, I am not satisfied with the Internet bookstore. ($-$)	
	SAT3. How satisfied are you with the Internet bookstore?	
Brand love	BL1. This is a wonderful Internet bookstore brand.	Carroll and Ahuvia (2006)
	BL2. This Internet bookstore brand makes me feel good.	
	BL3. This Internet bookstore brand is totally awesome.	
	BL4. I have neutral feelings about this Internet bookstore brand. ($-$)	
	BL5. This Internet bookstore brand makes me very happy.	
	BL6. I love this Internet bookstore brand!	
	BL7. I have no particular feelings about this Internet bookstore brand. ($-$)	
	BL8. This Internet bookstore brand is a pure delight.	
	BL9. I am passionate about this Internet bookstore brand.	
	BL10. I'm very attached to this Internet bookstore brand.	
Positive word-of-mouth	PWOM1. I have recommended this Internet bookstore brand to lots of people.	Maxham and Netemeyer (2003)
	PWOM2. I "talk up" this Internet bookstore brand to my friends.	
	PWOM3. I try to spread the good word about this Internet bookstore brand.	
	PWOM4. I give this Internet bookstore brand tons of positive word-of-mouth advertising.	
Brand loyalty	BLY1. This is the only Internet bookstore brand that I will buy from.	Carroll and Ahuvia (2006)
	BLY2. When I go shopping, I don't even notice competing Internet bookstore brands.	
	BLY3. If the Internet bookstore is out of the merchandise that I want to buy, I'll postpone buying.	
	BLY4. If I don't buy at the Internet bookstore, I will not buy from another Internet bookstore.	
Resistance to negative information	RNI1. Negative information about the Internet bookstore does not change my general view of the firm	Eisingerich et al. (2011)
	RNI2. I readily change my view of the Internet bookstore based on negative information about it	
	RNI3. Negative information about the Internet bookstore has no effect on me.	
	RNI4. Negative information about the Internet bookstore changes the way I think of the firm. ($-$)	

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