Australian Journal of Basic and Applied Sciences

2020 November; 14(11): pages 37-56
DOI: 10.22587/ajbas.2020.14.11.5

Original paper AENSI Publications

Gamification Effect on Brand Engagement: A Pilot Study

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Received date: 11 September 2020, Accepted date: 23 November 2020, Online date: 14 December 2020

Abstract

Introduction: Gamification has recently gained popularity as a technology promoting the users psychological motivations towards a service, activity, product or a brand. Different design characteristics of the design elements have been described as motivating and supporting individual attitude and behaviour. However, scarcity in empirical evidence answering the people drive to use gamification in the marketing field still represents a gap in the literature. Aim: the present study aims at proposing a prototype of a gamified framework specially developed for testing the effect of gamification on brand engagement according to UX designs using different game elements. Materials & methods: this is a pilot study targeting customers of gamification website. The data was collected through evaluating the relationship between the user experience and the game elements and their effect on utilitarian and hedonic motivations. Holistic evaluation of the whole gameful experience and its influence on customer attitude in regard to more brand enhanced engagement was further assessed. Results: evidence of a positive relationship was statistically highly significant between the proposed framework and the studied variables, in conjunction with player personality as an important moderating factor. Conclusion: The results proved that customer attitude towards a brand can be affected during a gameful experience and will eventually result in positive active enhanced brand engagement.

Keywords: Gamification, Hedonic Motivation, Utilitarian Motivation, Gameful Experience, User Experience, Game Elements, Brand.

INTRODUCTION

Gamification is a dynamic topic that vigorously attracted attention and extensively invaded the research specially during the past six years. The variability of its applications triggered researchers enthusiasm in different fields including; Game Theory and Design, Psychology, Human Computer Interaction, Education, Digital Information Systems, and Medical Science. However, this diversity resulted in a complexity of design approaches corresponding to each peculiar application and was strongly reflected on their different publications (Mora et al., 2017). Despite the growing fact of the ever-increasing number of game services or activities offered to consumers, the relevant published academic articles remain deficient in terms of bridging the gap between the market literature and the actual game related studies and the factors affecting it (Huotari& Hamari, 2017). Throughout the literature reviewed, it was depicted that there was a first wave of gamification research that systematically consisted of stating the definitions, familiarizing the taxonomies and frameworks and recognizing the game design elements; this was followed by technicality research articles which described design, architecture and systems; ending by an era focusing on gamified systems and users studies (Hamari et al., 2014; Seaborn & Fels, 2015; Nacke& Deterding, 2017).

The driven results regarding the gamification effect on users motivation indicate preponderance of positivity rather than negative or null outcome, however, no strong evidence could be supported by these studies with limitations on study design and analysis tools and strategies (Hamari et al., 2014; Seaborn & Fels, 2015). Moreover, the theoretical basis and foundation of these motivational effects is limited and ill-defined provided limited support for these studies. Accordingly, the important question directed to "How gamification is directly affecting motivation" requires attention and needs a data evidenced result resolving the

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ambiguity on whether the involvement of the psychological theories of motivation and behavior (Sailer et al., 2017) could enhance gamification and explain their effects in the market.

GAMIFICATION

The concept of gamification gained popularity since 2010 and has been defined as using game elements and related techniques in a non-gaming context (Deterding et al, 2011). Marczewski in 2014, proposed gamification design with specific features, which carries explicit distinction in objectives from conventional game design. The latter being exclusively concerned with entertainment, while the former is targeting business. The widespread applications of gamification in the last decade included marketing (Zichermann & Linder, 2010; Huotari& Hamari, 2012), healthcare (Bunchball, 2013; Almarshedi et al., 2015) and education (Kapp, 2012), with a drive to enhance loyalty and engagement, people motivation and shifting in people behavior. However, loyalty programs based on persuasive technology are similarly sharing this same concept such as bonus programs from credit card providers and frequent-flyer programs (Sailer et al., 2013), where users' behavior is influenced with no imposed change.

PERSPECTIVES ON MOTIVATIONAL MECHANISMS WITHIN GAMIFICATION

Schunk et. al in 2010, stated that motivation in gamification constitutes a series of psychological processes responsible for the initiation and continuity of a desired goal behaviors. Motivation is either extrinsic or intrinsic, as stated in the self-determination theory (SDT) proposed by Gagne and Deci in 2005. It is important to distinguish between them since extrinsic motivation referring to performing a task which leads to a separate outcome cannot create and sustain a gamification affect, while intrinsic motivation depends on performing an enjoyable and interesting task (Koivisto & Hamari, 2014).

USER EXPERIENCE

The term user experience, first occurring in the important Pine II& Gilmore textbook in 1999, "Experience Economy" is derived from considering the experience as a new form of economic rewards, deserved after consuming services or goods (Sheng & Teo 2012). Whereas, LaSalle & Britton in 2003 and Shaw &Ivens in 2005 advocated that user experience represents a group of interactions where a response results from the involvement of both the user or customer and the product provider or service. However, Sheng and Teo in 2012, suggested that the evaluation of user experience is based on assessing the difference between the consumer expectations and the stimulus resulting from an interaction with the provided service or product (Hsu & Chen 2018).

LaSalle & Britton in 2003, regarded user experience in a more holistic point of view, which considers the persons value as a whole rather than the customer, involving all levels of interactions between the person and the service or product. This practice magnifying customer value emphasizes on people memorable enjoyment exceeding their expectations during their interactions with the product or service provider (Sheng & Teo, 2012). The concept of co-creation role of customers ensures an excellent user experience, where the company provide the elements enhancing the user experience, while the consumer co-create their own experience (Prahalad & Ramaswamy, 2004). In accepting this co-creation approach, the user successfully interacts with the service providers, and communicate with them during all the stages design, production, delivery, and finally consumption (Sheng & Teo, 2012). Furthermore, Gentile et al in 2007, described the user experience as a 'new lever' producing an additional value to the holistically considered user and the firm as well. Additionally, Verhoef et al. in 2009 as well as Sheng & Teo, in 2012 noted that several responses are involved in each perceived holistic experience by the customer as a complex feeling including physical, cognitive, emotional, affective and social aspects that interrelate and overlap (Hsu & Chen, 2018a).

UX has remained a difficult and vague concept to define or understand through the literature reviewed (Hellweger& Wang, 2015; Rajanen et al., 2017). A conflict regarding the distinction between UX measurement and usability measurement is related to satisfaction, which is a critical component of usability, that is treated as necessary component of a UX quality of user experience assessment (Hellweger& Wang, 2015; Rajanen et al., 2017; de Normalisation, 2018; Nielsen, 1994; Bargas-Avila &Hornbæk, 2011). More ambiguity preventing clear understanding and practice of UX are the result of several factors based on cultural and social changes (Rajanen et al., 2017; Schubert, 1999; Darin et al., 2019). In a broader concept, Bargas-Avila &Hornbæk focus on the fact that usability depends on the efficacy and achievement capacities of a task in developing user experience, addressing emotional factors and hedonic qualities. A comprehensive overview of tools developed to assess user satisfaction and performance, cognitive workload and analysis measurements was presented by Bevan & Macleod (1994). The investigation of UX evaluation and measurements in different application domains have been conducted by Ganglbauer et al. in 2007, who reviewed the psychophysiological methods used in HCI, including electromyography (EMG), electroencephalography (EEG) and electrodermal activity (EDA). Nacke et al. (2010) stated a classification based on three categories of experience related to games, to measure game experience: quality of product, quality of human-product interaction and social, spatial, temporal, or another context quality. Whereas, categories for HCI qualitative methods for evaluating the interface of the video-games which focus in Affective User-Centered Design was classified by Ng et al., 2018, into user feedback and non-invasive categories. Additionally, a survey emphasizing on the cataloging self-reported instruments related to UX, communication, emotion, engagement construct and other qualities excluded any qualities not belonging to the HCI field was proposed by Hung, & Parsons, in 2018. Researchers demonstrated the usefulness of personalized gamification in terms of better motivation, intimacy with the user and engagement in new ecosystems (Busch et al., 2015; Orji et al., 2017). Accordingly, long-term studies were carried out for

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investigating the importance of focusing gamification design on fulfilling the motivations of each user (Hamari, 2017; Barata et al., 2017). Consequently, several basic elements were considered in designing a personalized gamification experience: identifying the users' profiles; interface elements as well as the content and functionality (González et al., 2016). Although several studies were extensively conducted regarding the personalization dimensions as the gender, the user types, the persuadability and design elements, yet, the method to produce highly personalized gamification interactions and the related factors remain an area of challenging interesting research (Jia et al., 2016; Orji et al., 2014; Orji et al., 2014; Orji et al., 2013; Orji et al., 2017; Tondello et al., 2016; Gil et al., 2015; Ferro et al., 2013; Busch et al., 2015).

GAME ELEMENTS

The basic building blocks of gamification applications are the game design elements, andare equivalent with game design patterns (Bjoerk&Holopainen, 2005; Kelle et al., 2013; Deterding et al., 2011; Werbach & Hunter, 2012). A number of researchers, in the context of gamification proposed several game design elements; as "Ten Ingredients of Great Games" depending on a self-presentation through, narrative context, avatars, competition and teams and feedback (Kapp, 2012; Robson & Bellotti, 2013; Werbach & Hunter, 2012, 2015; Zichermann & Cunningham, 2011; Zichermann & Linder, 2010; Reeves & Read, 2009). Fifteen components were identified by Werbach & Hunter in 2012, including points and teams, badges, avatars and leaderboards, and stressed on the"PBL triad", characteristic of the gamified applications, which depend on leaderboards, badges and points. Sailer et al. in 2017, focused on selecting elements based on several factors: visibility to users, ease of activation and deactivation abilities in an experimental setting and their effect on addressing the motivational mechanisms in the gamified framework. Furthermore, other game design elements such as progress or competition depending on both the perceptible aspect of the design at the surface level and the underlying mechanics should be easily implemented and independently manipulated by the game designer, thus enabling detection of their specific effects (Bedwell et al., 2012). Consequently, manipulating the game design elements occurring at the surface level is easier than those related with functions or those triggering user experiences: *First, Points* present in games and gamified applications, as rewarding for successful achievement of intended activities within the gamified environment; they allow measurement of player's behavior, since they similarly serve as feedback environment (Werbach & Hunter, 2012, 2015; Sailer et al., 2013); *Second, Badges* they consist visual representation of achievements, symbolizing merits, providing feedback, however, they have no narrative meaning, yet they symbolize the user's membership to the group owning the badge thus, exerting social influence (Wang & Sun, 2011; Antin& Churchill, 2011; Hamari, 2013); *Third Leaderboards* they rank players best performance based on a certain success criterion, acting as competitive indicators, however, their motivational potential is mixed. They can exhibit opposite effect by acting as effective motivators when the user is close to the top end and become demotivators when they are still lagging in the bottom. It can have a constructive effect on learning and participation through creating a social pressure increasing player's engagement, provided the respective competitors are at a comparable level (Costa et al., 2013; Crumlish& Malone, 2009; Werbach & Hunter, 2012; Burguillo, 2010; Landers & Landers, 2014; Slavin, 1980); *Fourth, Performance graphs* found in strategy or simulation games presenting information about the player's achievement in comparison with their previous accomplishment thus fostering mastery orientation(Sailer et al., 2013). On the other hand, it differs from leaderboards in that its graphs register individual performance with no comparison with other players and differs in overlooking the social reference standard (Dweck, 1986; Nicholls, 1984; Sailer et al., 2013); *Fifth, Meaningful stories* they are not relate to the user performance, since the narrative is contextualizing the characters and activities of the game without inquiry for achievements or points This story is delivered via either just a game title or by more complex typical story telling occurring in video-game (Kapp, 2012). *Sixth, Avatars* usually created by the player allowing them to adopt another identity, are visual presentations, are either simple ranging from being just pictogram to animated more complex 3D representations, they main requirement is the readily identification and distinction the players and humans without mistake (Werbach & Hunter, 2015; Annetta, 2010); Seventh, Teammates they are characters representing the real player or virtual non-player character (NPCs). They can either relate in cooperation or competition or can induce conflict (Werbach & Hunter, 2012; Sailer et al., 2017).

MOTIVATION

Motivation is a pertinent issue in psychology being at the core of cognitive, biological, social regulation and all aspects of intention and activation. Motivation is an important concern to persons in key positions, who influence others such as teacher, manager, religious leader, health care provider, coach and even parents (Ryan & Deci, 2000). People's behavior depends on two main drives, an internal authentic motivation derived from a self- commitment, values or interests or a sense of external controlled of fear of being watched and surveilled (Johnson, 1993). Internally motivated individuals depict more excitement, interest and confidence with better performance, creativity, persistence, self-esteem and vitality despite their perceived efficiency and competence for their intended activity (Deci & Ryan, 1991; Sheldon et al., 1997; Nix et al., 1999; Ryan et al., 1995; Ryan & Deci, 2000).

i. Hedonic Motivation (HM)

Several definitions attempted to explain hedonic motivation (HM). HM is the will to initiate a behavior that would enhance a pleasant experience or a behavior that decreases negative experience. HM has been used in two contexts: *First, principle of human behavior* motivating their action towards obtaining a reward or avoiding a punishment (Gray, 1981); *Second, well-being*, the contradiction between HM aiming at achieving pleasure and avoiding pain versus eudaimonic motivation concerned with personal

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excellence ; explains the difference between people pursuit towards their happiness (Huta& Waterman, 2014; Kaczmarek, 2017). Overby & Lee in 2006, defined HM as an overall evaluation of experienced sacrifices and benefits. Hedonic goal motivates consumers towards, pleasure and makes them more sensitive to mood changes and energy levels, while a limited stimulus is associated with economic utility (Lindenberg & Steg, 2007). Consumers were less price sensitive towards hedonic goods in comparison with utilitarian goods (Wakefield & Inman, 2003; Lindenberg & Steg, 2007; Barbopoulos& Johansson, 2016).

ii. Utilitarian Motivation (UM)

Utilitarian Motivation (UM) has been defined as an assessment of functional sacrifices and benefits and including more cognitive levels of attitude (Overby & Lee, 2006; Jarvenpaa& Todd, 1997; Teo, 2001; Hsu, & Chen, 2018). UM consumer's behavior is characterized by being rational and task-oriented (Batra &Ahtola, 1990). Utilitarian value research shows higher preponderance than hedonic value in the field of the consumer behavior (Bloch & Bruce, 1984). Consumers in regard to functional utility focus on successfully satisfying their needs, manifested in simple products and services acquisitions. (Bloch &Richins, 1983). Accordingly, Wang & Benbasat in 2005, advocated that an embedded explanation pertinent to the product rationale as recommended by the agents empowers the clients to rationalize about the motivation towards the recommended good in relation to their needs (Vinerean, 2013). ''Hedonic" and ''utilitarian" values terms are applied not only concerned with motivations, but to systems of experience and its aspects. Value is an outcome of the customer's evaluation of his interactive experience with an activity, event object or media (Chiu et al., 2005), which fosters consideration of utilitarian and hedonic aspects in the online purchasing processes (Zanjani et al., 2016; Ozkara etal., 2017; Chen & Chen 2017). Furthermore, it has been assumed that the use of gamification in purchasing activities would eventually result in positive outcome of the consumers' continuous use of those of gamified websites (Chen & Chen, 2017).

PLAYER PERSONALITY

Gameful systems are more effective and more interactive when they are personalized, while helping player's achieve their goals, supporting them through their education in certain topics, and fostering their behavior and attitude changes (Busch et al., 2015). Efficacy in personalization of the relation to the player's personality traits have been depicted in user interface design, games and persuasive technology (Nov &Arazy, 2013; Kaptein et al., 2015; Kaptein et al., 2012; Bakkes et al., 2012; Orji et al., 2013; Orji et al., 2014; Tondello et al., 2016). It was suggested that personality affects the user's psychological experience and their satisfaction and preferences of game types and elements and virtual reality activities and applications (Kober&Neuper 2013; Tondello, et al., 2016; Johnson et al., 2012; Jia, et al., 2016).

Bartle's player type model and its extensions identified four types of players of Multi-User Dungeons (MUDs): *Achiever, Socializer, Killer and Explorer,* for which Yee applied a factor analysis approach (Bartle, 1996; Bartle, 2005; Yee et al., 2012; Yee, 2007). This analysis resulted in identifying three different components of user motivation with ten sub-categories: *Achievement* (mechanics, advancement and competition); *Social* (teamwork, socializing and relationship), and *Immersion* (role-playing, escapism, customization and discovery). The first Demographic Game Design model (DGD1) is linked to Myers-Briggs Type Indicator (MBTI) (Myers, 1962; Bateman & Boon, 2006), and suggested the four players' model: *Manager, Participant, Wanderer and Conqueror).* The second Demographic Game Design model (DGD2) (Bateman et al., 2011) was concerned with the preference of the players whether single or multiple, and their different skills. Despite the importance of considering players' characteristics, it was noticed that DGD1 and DGD2 are based on a pre-existing model not focusing on games, the psychometric model (MBTI) (Tondello et al., 2016). Xu et al. in 2012, performed an evaluation of a health game peculiar to young adults that resulted in the development of five types of players including both motivational and behavioral factors: active buddies, freeloaders, achievers, team players and social experience seekers, however, the validity of these types to personalize games was not investigated (Tondello, et al., 2016). Another approach "BrainHex model" evaluated on its psychometric properties, introduced a larger array of player archetypes and identified seven player's types: *Socializer, Seeker, Conqueror, Mastermind, Achiever, Daredevil and Survivor* (Nacke et al., 2011; Nacke, et al., 2014; Busch et al., 2016). However, the usefulness of these aforementioned models is limited regarding gameful design (Tondello et al., 2016).

Data collected from a gamified university engineering course created specifically for gameful design, regarding students' performance and their gaming preferences classified four types of those students in relation to their gaming preferences: *Half-hearted; Achievers; Underachievers and Regular* (Tondello et al., 2016). A further model specifically designed for the gamified learning domain is the Barata 's model in 2014 (Tondello et al., 2016). Six user types were introduced by Marczewski in 2015, with different personifications of user's intrinsic and extrinsic motivational factors, based the model on observational behavior: *Autonomy; Competence; Purpose and relatedness* (Ryan & Deci, 2000; Deci et al., 1994). In contradiction, the Hexad model covers a broader range of gameful systems and player types: *Philanthropists,* motivated by meaning and purpose while showing altruism and giving willingly with no expectation of a reward; *Disruptors,* they tend to challenge and disrupt the system since their motive is change; *Socializers,* their driving motivation is relatedness and social interactions with other players; *Free Spirits,* they are motivated by freedom, self-expression and autonomy acting without any external control; *Achievers,* their main motive is competence, they show progression proving themselves and challenging difficult tasks; *Players,* extrinsic rewards are the motivating factors independent of the type of the activity.

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GAMEFUL EXPERIENCE

Several descriptions were advocated by researchers ranging from being a gameful experience in non-game contexts (Deterding et al., 2011), to using the term game like experience (Hammedi et al., 2017; Robson et al., 2014; Robson et al., 2015), to defining gamification as a technical process of stimulating the application of a game in non-game context (Huotari& Hamari, 2017) and finally to consider it as a psychological consequence to the use of a gamified application (Landers, 2014). In summary, the gameful experience in gamification is expressed as a feeling the user develops, even when not playing a game (Domínguez et al 2013; Robson et al, 2016). Eppmann et al. in 2018, elaborated a comprehensive definition, stating that gameful experience refers to a positive emotional quality while using a gamified application.

CUSTOMER ATTITUDE

A paradigm shift occurred during the last decaderegarding consumer behavior, since its related consumer attitude gained the central focus in theories and research (Ajzen, 2008). While, the conception of attitude has been previously strictly associated with special predisposed mental conditions (Fishbein & Ajzen, 1975). Historically, in social psychology “attitude” as a term was introduced as a tool for understanding human behavior " (Fishbein & Ajzen, 1975).

Several definitions of attitude were suggested in the literature. In a trial to find a clear definition of attitude Blackwell et. al in 2001 stated that it is the feeling towards a specific object whether positive or negative or briefly whatever a person likes or dislikes (Schlenker, 1978). In broader expressions, it has been referred to attitudes as a tendency to consistently respond favorably or unfavorably towards a specific object (Schlenker, 1978; Fishbein & Ajzen, 1975; Peabody, 1967). Ajzen & Fishbein (1977), Peter & Olson (1999) further advocated that the main principle of attitude is the individual’s general evaluation of a certain concept. More specifically, Thurstone (1928), denoted the attitude as the total outcome of the sum of the person’s feelings and inclinations, bias or prejudice, ideas, pre-conceived notions, convictions, threats and fears versus a special topic or object (Thurstone, 1928). Doob (1974) after undergoing extensive research concluded that attitude is an implicitly socially significant drive-producing response. On the other hand, these crowded conflicting principles and definitions drove Fishbein & Ajzen (1975) to consider the concept of attitude as being ambiguous.

From another prospective, the psychological implication of attitude, should be considered in parallel to the concept. An important definition in this context is "Attitude expressions communicate aspects of the person's social identity and world view" (Schlenker, 1978). Accordingly, a diagnostic value of attitude reflects the person’s image. A person’s attitude will associate a person to a special group of people, through revealing his personality and positive or negative behavior, or ability to gaining or avoiding an approval or disapproval (Schlenker, 1978). Cottrell in 2003, more comprehensively assumed that attitude is not an isolated concept but rather dependent and connected with other concepts (Cottrell, 2003). Similarly, Perner in 2010, observed the consumer attitudes in the market context are a cumulative factor summarized as beliefs, feelings and behavioral intentions toward a brand or a product. These intersected factors are viewed together as highly interdependent components representing forces that influence the consumer’s reaction to the object (Asshidin et al., 2016).

Ajzen & Fishbein in 1977, stated that since attitude in general is defined as an expression of emotion, brand attitude can comparably be stated as the feeling the consumers develop toward a brand. Furthermore, Keller in 1993 considered brand attitude as the main basis of consumers brand behavior, undoubtfully will lead to consumers’ evaluation of brand integrity (Lu & Ho, 2020). When consumers feel enthusiasm toward a brand, the likelihood of positively acting in favor of this brand increases. Kotler in 2000, through another approach focus on the importance of a good presentation of the brand image or a product which will eventually lead to lower skepticism and better consumers’ perception towards the product, raising the consumer trust in the brand. A strong application of this concept has been observed in the gamification world, where the ever-growing positive attitude led to the big inflation in the usage of gamification services (Hamari & Koivisto, 2015; Lu & Ho, 2020).

CUSTOMER BRAND ENGAGEMENT

It has been defined as a motivational state which develops through the customer’s interactive experiences with the brand. From the psychological prospective brand engagement, refers to the strength between the customer’s self-concept and the brand (Swaminathan et al., 2007; Fournier, 1998; Brodie et al., 2011, Summers & Young, 2016). Brand engagement as a multidimensional psychological state results from interaction with a brand and is considered to a be co-creative customer experience. It includes several aspects: emotional, cognitive and social engagement (Brodie et al., 2011; Gambetti et al., 2012; Hollebeek et al., 2014; Sprott et al., 2009; Vivek, 2009; Vivek et al., 2014; Zhang et al., 2017). The *Emotional aspect of brand engagement* refers to the consumers’ positive interaction or enthusiasm towards the brand”. *Cognitive brand engagement* focuses on the degree of the person’s interest during his interaction as the conscious attention, which is the focus of the engagement, it constitutes the brand related thinking process. *Social brand engagement* brand/ user enhancement is based on other users in the focus of engagement (Hollebee et al., 2014; So et al., 2014; Vivek et al., 2014; Xi & Hamari, 2019).

The goals of brand engagement mainly focus on stimulating the consumer’s emotional, cognitive and behavioral motivation through activation of the user’s energy, passion and concentration toward the brand’s interaction interactions

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(Hollebeek, 2011). The role of gamification in this respect is enhancing these engagements through identifying the motivating elements (Summers & Young, 2016). Evidence of increasing engagement of the users acting as embassador of a brand within the social media space is related to the interconnection between the physical and digital brands. Gamified experiences foster brand designers enhance the engagement through delivering compiling experiences related the intended brand (Briggs, 2010). A dynamic brand community, where the brand story is promoted to involve both the established brand identity and that assigned to this brand by the customers (Gensler et al., 2013; Summers & Young, 2016).

RESEARCH FRAMEWORK & HYPOTHESIS DEVELOPMENT

Gamification design should be directed towards developing an experience fitting the user's profile and creating a challenging system that would eventually increase his/her engagement rather than pure fun (Casual Game Association, 2011). Currently, gamification is operated through a conceptualized point-based systems evaluation related to the pre-defined goals and to the social dynamics through feedback elements as leaderboards (Marache-Francisco &Brangier, 2013d).

Sheng & Teo (2012) advocated that assessing the difference between customers' expectations and the resulting impulsive interaction with the provided product or service, best evaluates the user experience. However, LaSalle & Britton (2003), described this latter as a holistic experience involving all personal attitudes not just the customer's perception, thus act on a multilevel interactive approach, which will undoubtedly enhance their motivational experience and expectations (Sheng & Teo, 2012; Hsu & Chen, 2018b). Online motivation has been categorized under two main headings recreational or hedonic motivation (HM) and task oriented or utilitarian motivation (UM) (Bui & Kemp, 2013). Consumers' behavior and attitude could be affected by the wide range of experienced hedonic values ranging from pleasure, fantasy, fun and escapism.

Accordingly, a related research question has derived a hypothesis based on whether a well-tailored custom-designed content could positively affect their HM and enhance their user experience?

H_1: User Experience have a positive effect on Hedonic Motivation

On the other hand, since, UM focuses on the effective and efficient acquisition through a task-oriented design a second hypothesis would foster the second research question regarding its positive effect on user's experience.

H_2: User Experience have a positive effect on Utilitarian Motivation

Further researches stressed on the pivotal role of game design elements. A compiling and conflicting list in this perspective was highlighted as "PBL triad" including points, badges and leaderboards; while others added competition, feedback, avatars and even narrative context (Werbach & Hunter 2012). This associated subjectivity raised controversy regarding the adoption of game design elements definitive characteristics (Sailer et al., 2017). However, the psychological component sparsely discussed in the literature (Vansteenkiste et al., 2010; Mekler et al., 2017; Seaborn & Fels, 2015), involving the HM and UM cannot be overlooked, as an important modifying element with positive impact on user's behavior and attitude. Hence, a research question could derive two hypotheses concerned with the presumed positive effect of game elements on HM and UM.

H_3: Game Elements have a positive effect on Hedonic Motivation
H_4: Game Elements have a positive effect on Utilitarian Motivation

In brief gamification provides a service, aiming at intrinsically motivating a target behavior, which will ultimately promote the user experience through exercising (Hamari et al., 2014; Mora et al., 2015; Huotari& Hamari, 2017; Rigby, 2015; Seaborn & Fels, 2015). It should be emphasized that the game hedonic and functions should be distinguished from the gamified services that include the utilitarian goals which exceed the service use. An overlap and interaction exist between user experience and engagement based on his experience of using technology and software and his gameful experience. Personal user experience, however, is conceptualized as being based on hedonic attributes of challenge and interest with their potential positive effect. Although user engagement and user experience directly relate to the entire experience of system or service, yet gameful experience is emerging from the interaction with affordances of these services (Huotari& Hamari, 2017; Ijsselsteijn et al., 2007; Wright & Blythe, 2007; Högberg et al., 2019).

This entails verifying two hypotheses; that the hedonic and/or utilitarian motivation of the player would affect his/her gameful experience positively.

H_5: Utilitarian Motivation has a positive effect on Gameful Experience
H_6: Hedonic Motivation has a positive effect on Gameful Experience

It has been advocated that in gamification, the gameful experience is the drive towards a targeted behavioral outcome, that is subjectively affected by personalization (Huotari& Hamari, 2017; Seaborn & Fels, 2015; Werbach, 2014; Landers et al., 2018b). This subjectivity entails the consideration of user-adapting gamified services as an approach for improvement of the ability of the gamified services and eventually improve the changing ability of the targeted attitude (Högberg et al., 2019). This fostered a hypothesis that player personality will eventually moderate both the hedonic and the utilitarian motivation on gameful experience positively.

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H_7: Player Personality will eventually moderate the Hedonic motivation on Gameful Experience
H_8: Player Personality will eventually moderate the Utilitarian motivation on Gameful Experience

One of the goals of gamification is extending motivational impact of the gameful experience beyond the in-game phase to include the postgame phase, (Elson et al., 2014) as a driving accomplishment for goal achievement, progress and successful performance, reflecting the existence of a customer targeted attitude towards a brand (Huotari& Hamari, 2017; Seaborn & Fels, 2015; Werbach, 2014; Landers et al., 2018b). This could be assessed as an area of investigation and a hypothesis could be derived stating that the gameful experience affects targeted customer attitude towards a brand positively.

H_9: Gameful Experience has a positive effect on the targeted customer attitude

Brand attitude constitutes the basis of consumer's brand engagement towards the evaluation of a brand integrity decreasing the perception risk and increasing his positive trust towards the brand Kotler (2000), Hamari & Koivisto (2015). Brand engagement has been defined as a psychological state occurring in relation to interactive customer gameful experience with a focal object or a brand in focal relationships" (Brodie et al., 2011; Huotari& Hamari, 2017; Högberg et al., 2019). It is therefore expected that gameful experience offered by gamified websites will eventually enhance customer experience resulting in brand engagement and the provision of both hedonic and utilitarian values (Hamari & Koivisto, 2015; Lu & Ho, 2020). This argument supports the hypothesis that the targeted customer attitude towards a brand affect brand engagement.

H_{10}: Targeted customer attitude has a positive effect on Brand Engagement

The scope of the present work was based on evaluating the customer's experience and its effect on brand engagement, in the field of gamification, regarding 3 main elements: Information Systems, Psychology and Marketing. Each is assessed according to its related factors (figure 1). A comprehensive questionnaire involving selected gathered questions from previous publications, was validated for the relevance of each section. This questionnaire included two parts: the first measured the demographic data of the participants, while the second part measured the following variables based on a five-point Likert scale ranging from "1 = strongly disagree" to "5 = strongly agree" (Schmitt, 1999), (Gentile et al., 2007), (Sheng & Teo, 2012), (Tondello et al., 2016), (Antin& Churchill, 2011), (Fitz-Walter et al., 2011),(Sailer et al., 2013), (Xu &Zhi, 2017), (Nanjari Wyss, 2019), (Toda et al., 2019), (Upshall, 2020).

A. Information Systems

i. *User Experience (UX):* it involves designing the whole process of the product acquisition and its integration, including all aspects of design, function, usability and branding. Five types of strategic experience (sense, feel, act, affect, and related) were evaluated through 15 questions.
ii. *Game Design Elements:* they constitute the building blocks of gamification applications. The eight elements chosen in this research, were based on their psychological effect on customers, while using a gamified website. The eight assessed items were; Badges; Points System; Competition; Goals; Achievement; Leaderboards, Teams and Rewards.
    - Competition: Its principle is a kind of conflict or scoreboards, when two or more players are competing while playing in order to achieve a common goal. This will eventually foster the player's engagement and motivation
    - Badges: are visual representations of achievements. Such badges systems can take different levels of complexity. The main motivational mechanisms addressed by badges were hypothesized as; Badges fulfill the players' need for success and thereby address people with a strong power motive. Badges work as virtual status symbols and thereby address people with a strong power motive. Badges function as a form of group identification by communicating shared experiences and activities and thereby address people with a strong affiliation motive. Badges possesses a goal setting function. Badges can enhance the players' feeling of competence.
    - Points System: despite being basic game elements, yet their behaviorist learning perspective would hypothetically address motivational mechanisms including; Points function as immediate positive reinforcements. Points would be seen as mostly virtual rewards, provided for executed actions
    - Goals: Assigning actions to the user. These should have some challenge to them and not be trivial. For example, diet apps may assign the goal of eating a certain amount of fruit and vegetables every day. This is considered an objective, whereas an action like logging in is not.
    - Achievement: Achievements are goal variants representing an achievement with a hypothesized impeding sense of pride. They are rather the combination of challenges, rewards and progress, through a complex set of game mechanics tracking the user behavior in the game, based on collected information points, bonus challenges (mini-games) or time (different gameplay modes – limited time, higher difficulty, multiplayer, etc.).
    - Leaderboards: it is a critical element of motivation or demotivation, through representing the information of the players' success or failure. Hypothesized effects are; Individual leaderboards foster competition and address achievement and power motives. Team players achieving top scores will enhance social relatedness through emphasizing collaboration and community activities provided by shared goals
    - Teams: it is based on collaboration and interaction which will eventually strengthen social relatedness and ensure active community collaboration towards achieving their shared goals.
    - Rewards: Positive feedback the user receives in exchange for engaging in a desirable behavior. Rewards can either exist in the digital space, or can be used in the real-world, like a discount code. They are usually more periodic than points and reflect some kind of cumulative progress.

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B. Psychology

i. *Hedonic Motivation:* it is based on the general principle of both emotional or experiential aspects under 2 contexts *first*, the human behavior leading to rewards or avoiding punishments and *second* the user's well-being while seeking and enjoying pleasure and avoiding pain.
ii. *Utilitarian Motivation:*it focuses on the functional utility, where the clients experience satisfaction, while fulfilling their consumption needs.
iii. *Player Personality:* this represents a distinct player-related phenomenon. The player-personality questionnaire was based on "Hexad Framework" which assesses customers' personalities according to six player types: Philanthropists, Disruptors, Socializers, Free Spirits, Achievers and Players.
iv. *Gameful Experience:* It is a multidimensional construct and is co-created by the user and the gamified service, the used scale in the questionnaire was on the "GAMEFULQUEST" scale, the related items were: Accomplishment, Challenge, Competition, Guided, Immersion, Playfulness, Social experience

C. Marketing

i. *Targeted Customer Attitude*: as an expression of emotion and behavioral brand attitude as the consumers' feeling toward a brand.
ii. *Customer Brand Engagement (CBE)*: it is the stimulation of the customers' interaction towards the brand and the engagement of other participants while sharing their experience and ultimately enhance brand loyalty and growth.

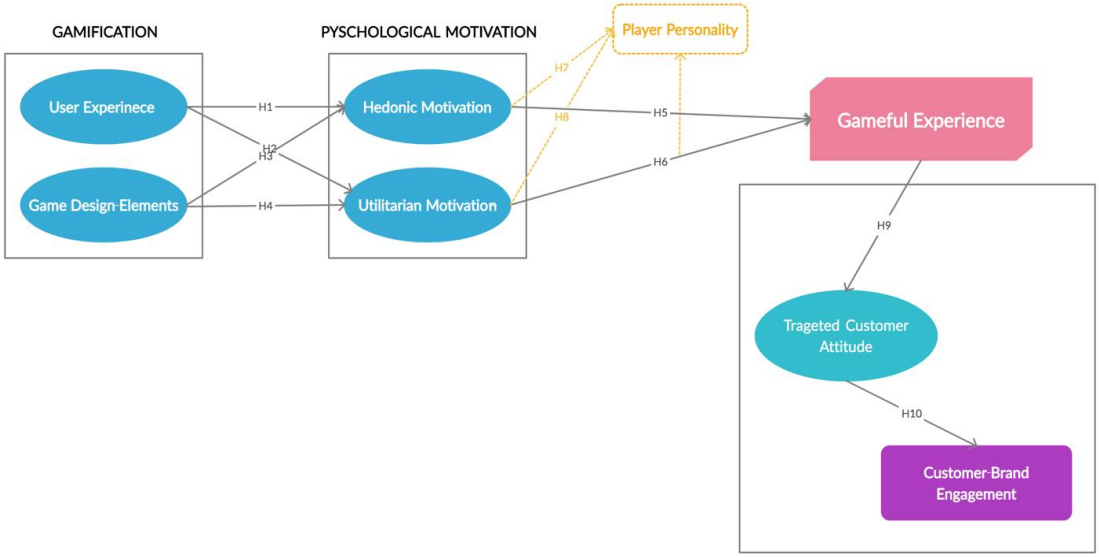

Figure 1: Research Framework

METHODOLOGY

The study is investigating the effect of gamification on brand engagement. The research methodology describes the research design, the target population, sample and sampling procedures, the instrumentation, data collection procedures, and data analysis.

A. Research Design

The research design in the present study was based on the research "onion approach" suggested by Saunders et al. in 2007 which focuses on considering all important issues while diverging towards the center of the onion.In accordance with this approach, six layers must be taken into account before the central point and core of the onion, *Research Philosophy; Approach to Theory Development; Methodological Choice; Research Strategy; Time Horizons and Techniques and Procedures*.

i. *Layer 1: Research Philosophy:* The present work selected the pragmatist view which proclaims that instead of focusing on methods, researchers should emphasize on answering the research problem and make use all available approaches to identify the research question, which is actually the effect of gamification on brand engagement.
ii. *Layer 2: Approach to Theory Development:* The present work depended on deductive approach, reflecting a focus on theory testing, as theory was first adopted as the framework for developing and testing hypotheses in a specific research context.
iii. *Layer 3: Methodological Choice:* In this study a mixed-approach design both quantitative and qualitative methods were used to collect and analyze data. The objectives of qualitative research are usually exploration and description, whereas the objectives of quantitative research are usually description and explanation. The qualitative aspect of the study starts first through an experiment followed by the quantitative surveys.

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iv. *Layer 4: Research Strategy:* The present study is exploratory and descriptive, considering the intention of collecting a large amount of data from a sizeable population efficiently and economically in a highly economic way. The study will use the experiment and survey strategies as they are usually associated with the deductive approach. It is also a popular, common strategy in business and management research and is most frequently used to answer who, what, where, how much and how many.
v. *Layer 5: Time Horizons:* A cross-sectional 'snapshot' descriptive survey is the most appropriate option for the current study, as it is conducted in a timely provisioned period.
vi. *Layer 6: Techniques and Procedures*: This represents the outer onion layer moving the research design towards analysis of the collected data.

B. Sampling and Target Population

In this study the targeted population consisted of burger consumers, who are online customers in the Egyptian market. The used sampling procedure was the probability technique, through a random sampling plan generally allowing each participant of the selected population to have an equal probability of being selected. The sample participants for the questionnaires were randomly selected from customers visiting Adouz Burger prototype data to reduce bias associated with selecting certain subpopulations.

C. Qualitative Experiment (Prototype Development)

The prototype was developed specially for testing the effect of gamification on brand engagement according to UX designs using different game elements. The prototype was built as an e-commerce website that sells online Burgers within two cities in Egypt; Cairo and Alexandria. The used game elements were badges, points system, Competition, goals, achievements, leaderboards, rewards and teams, the prototype was developed using Gametize platform. Additionally, the website was hosted online on the Gametized platform named Adouz Burger for the testing during the data collection period.

Each customer gets in immediate contact with the gamified system, through following a particular scenario as he/she visits the website: The application was divided into 4 challenges, where customers had the freedom to choose to start with whatever they want to. Moreover, each challenge contained within it other challenges or information displayed in an appealing way. *First*, the customer signs up within the website with their e-mails, then 4 challenging cards pops to him. *Second*, the customer was directed to take the first challenge, which was a question about the most popular sandwich in Adouz Burger, a correct answer will grant the player 20 points. *Third*, the customer then navigates towards his second challenge, where a personality test is deployed. From 24 statements, the player is invited to select the one which he feels best describes his/her personality and earns an additional 100 points. *Fourth*, through pressing on the next button the user is invited to get acquainted with other variable personality types through popping flash cards. *Fifth*, this is considered a highly competitive stage, through this third challenge a guessing question is addressed to the player about which sandwich will Adouz Burger offer next. The first 100 customers replying correctly will earn 70 points. Each user is given one chance only without allowing correction of a wrong answer. Furthermore, it is timely limited to one week. *Sixth*, this is the last step, where the card carried a poll question to the user asking them to identify the best time to eat Adouz during the year. Answering this question granted a further 30 points to their profile. Concurrently, the survey unlocks, the user answers the attached questionnaire with no need to reach it through the google document application.

The present platform offered the customers several advantages. *First*, all goals were readily displayed within the challenge cards; *Second*, users can easily redeem their rewards and badges through accessing their rewards and achievements pages; *Third*, the color-coded badges were linked to their level of achievement recorded through their earned points and their unlocking challenge level. At 50 earned points, a *bronze badge* was granted, followed by a *silver badge* realized after responding to more difficult challenges, and was reached only after finishing the personality test. Subsequently, the golden badge secured 200 points and last, was the platinum badge reflecting extensive activity on the website ending by earning 500 points. On the competitive prospective, the leaderboard page reflected the status of each user versus other players' achievements. On the other hand, players were given the freedom to create their own teams, where they can add other peers and reach their common goal together.

D. Quantitative Survey

Participants have been mainly recruited through probability sampling via e-mails and social media. The online survey was disseminated over a 4 weeks period, extending from 1st to 30th September 2020.

Procedure

Data was collected through Egyptian participants taking our large scale online 15 minutes survey deployed in an online service using google forms, ensuring as much as possible the equivalence of the statements. It was translated into Arabic and English to ensure maximum engagement of native Arabic speakers having difficulties using English. The participants were informed about the required estimated time before participation. It could be completed anonymously, with an added feature preventing navigation between the successive incomplete sections. The survey design consisted of 123 questions, focusing on the users' psychological state, while using gamification system within an e-commerce context. It was based on 9 sections:

- Fifteen questions about user experience, aiming at measuring the experience the customer went through while visiting Adouz Burger.

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- Eight questions about the used game elements in Adouz Burger, with the purpose of knowing, whether these game elements affected the customer's motivation.
- Four questions about the hedonic motivation, to measure the psychological effect of gamification on customers.
- Four questions about the utilitarian motivation, to measure the psychological effect of gamifications on customers
- The Hexad Framework was used to assess the player's personality type through answering 24 questions, (Tondello et al., 2016), in a trial to identify the relationship between the user's gameful experience and his type of personality
- Fifty-six questions measuring the gameful experience using the "GAMEFULQUEST" scale (Högberg et al., 2019)
- Eight questions measuring the targeted customer attitude towards the brand.
- Five questions used to measure the customer brand engagement.
- Six questions about demographics (gender, age, educational level, occupation, marital status and income), with the purpose of describing the sample and analyzing its validity and representativeness.

ANALYSIS &MEASUREMENT

The total participant number was 60 users, who performed the whole playing tasks and answered all the questionnaire. Their descriptive demographic data is summarized in table (1), representing equal gender distribution of 30 participants per gender (50%), and average age of 25 years.

Table (1): Demographics

Measure	Item	Frequency	Percentage (5)
Gender	Female	30	50%
	Male	30	50%
Age	20-30	28	47%
	31-40	22	37%
	41-50	6	10%
	More than 51	4	7%
Education	Bachelor's degree	22	37%
	High School Degree	6	10%
	Master's degree	20	33%
	PhD Degree	12	20%
Occupation	Academic	30	50%
	Professional	14	23%
	Self-employed	4	7%
	Unemployed (e.g. student, retired, housewife)	12	20%
Marital Status	Married	36	60%
	Single	24	40%
	Divorced	0	0%
	Widowed	0	0%
Income	Less than 20,000	30	50%
	20,0001-30,000	12	20%
	30,001-40,000	2	3%
	40,001-50,000	8	13%
	60,0001-70,000	2	3%
	More than 70,000	6	10%

A. Measurement

All variables included a range of items and were measured with 5-point Likert scales. All operationalizations of psychometric constructs were adapted from previously published sources. Table (2) reports the number of items in each construct as well as the sources from which each of the constructs was adapted.

Table (2): Measurement instruments

Construct	Name	Included/ total items	Adapted from
UX	User Experience	15/15	(Hsu & Chen, 2018b)
GE	Game Elements	8/10	(Nanjari Wyss, 2019)
HM	Hedonic Motivation	4/4	(Hsu & Chen, 2018b)
UM	Utilitarian Motivation	4/4	(Hsu & Chen, 2018b)
PP	Player Personality	24/24	(Tondello et al., 2016)
GameEx	Gameful Experience	56/56	(Högberg et al., 2019)
CA	Customer Attitude	8/8	(Yang et al., 2017)
CBE	Customer Brand Engagement	5/5	(Xi & Hamari, 2020)

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B. Validity and Reliability

The current model-testing used for prediction-oriented studies, was based on component-based PLS-SEM in SmartPLS 3.0 M3 (Ringle et al., 2005), with the crucial advantage of non-parametric estimation, which eliminated the unneeded restrictive assumptions related to the data distribution.

The converged validity metrics used in this study, were composite reliability (CR)> 0.7 , and Cronbach's alpha (Alpha) > 0.7, and were greater than the thresholds cited in relevant literature. Thus this states that the reliability is significantly above required level, as if the score was below these values it would have been required to change the used survey questionnaire.

Assessment of Discrimination validity was assessed through confirming that each item displayed higher scoring versus its corresponding construct. Those assessments verified the reliability and validity of the discriminant validity (table 2).

Moreover, the measured items in the present survey were randomly ordered to avoid a common method bias to prevent patterns detection by the respondents. This common method bias was tested in the present work through ''controlling for the effects of an unmeasured latent methods", (Podsakoff et al., 2003).

Table (3): Convergent and Discriminant Validity

	CA	CBE	GE	GameEx	HM	ME1	ME2	Pers	UM	UX
CA	0.794									
CBE	0.879	0.822								
GE	0.733	0.681	0.705							
GameEx	0.838	0.902	0.665	0.709						
HM	0.759	0.688	0.602	0.734	0.880					
Moderating Effect 1	0.069	0.026	-0.045	0.084	-0.197	1.000				
Moderating Effect 2	0.212	0.359	0.264	0.400	0.209	0.185	1.000			
PP	0.386	0.421	0.610	0.444	0.578	-0.272	0.424	0.546		
UM	0.830	0.707	0.497	0.701	0.745	0.172	0.287	0.352	0.734	
UX	0.803	0.749	0.644	0.784	0.748	-0.176	0.330	0.540	0.719	0.651

RESULTS

The results of the direct paths in this research model are summarized in Fig (2), and are positively supporting the hypotheses H1, H2, H3, H4., H5, H6, H9 and H10. Statistically significant results were recorded regarding the studied variables. The Psychological motivations on the users, showed 58.4% for the hedonic motivation, whereas utilitarian motivation accounted for 51.9%. Regarding the gameful experience, the model revealed 59.2%. On the other hand, the results evaluating the customer attitude towards a brand depicted 70.2% of the attitude variance towards the use of a gamified service. While, the customer brand engagement in the gamified environment appeared in the model as 77.3%.

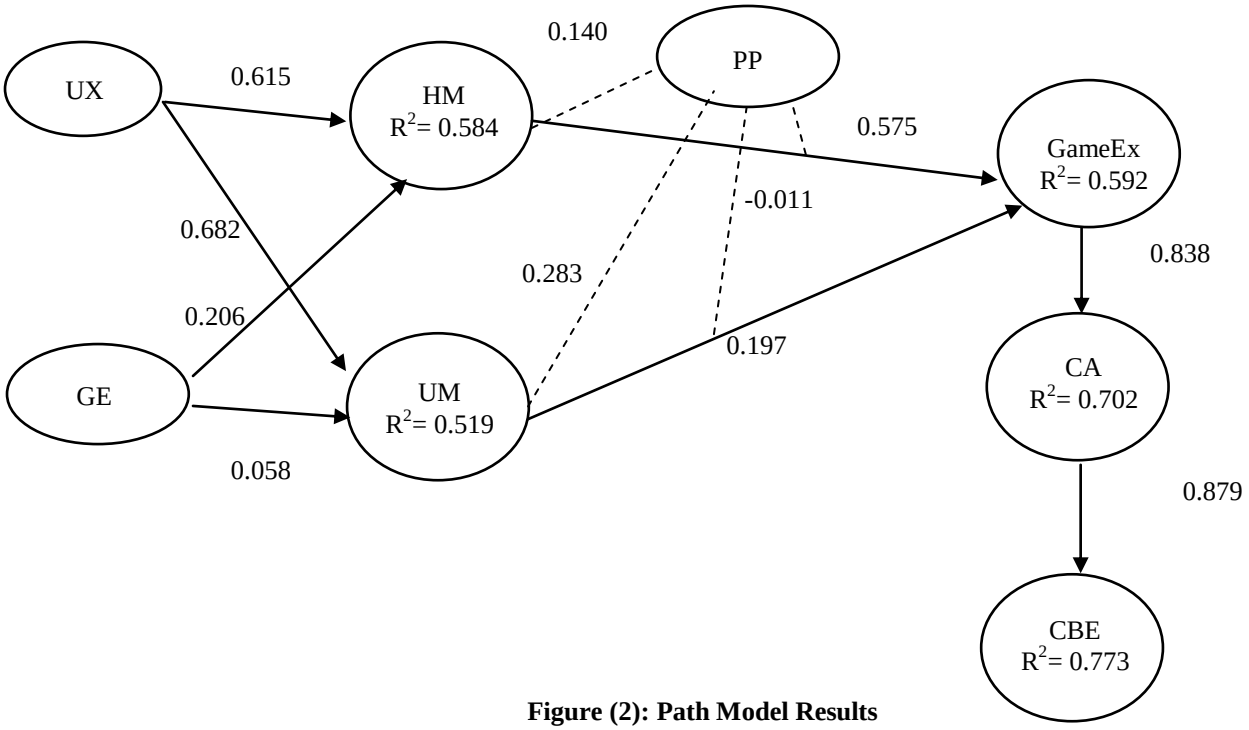

Figure (2): Path Model Results

Moreover, most hypothesized variables demonstrated highly significant relationship with the other tested variables. However, the only exception occurred with a weaker relationship between the HM 0.206 and UM 0.058 and the game elements.

The effect of the player personality on the gameful experience as evaluated for its moderating effect on both HM and UM. It showed a positive relationship not only on HM and UM, but rather a direct significant effect on the overall gameful experience. However, interestingly when GameEx was added in a trial to model both the direct effect and mediation, results

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changed to insignificant as close as zero value (-0.011), suggesting that actually, the player personality effect and the gameful experience are both fully mediated through HM and UM, whereas, this mediating variable was significantly correlated individually between HM and GameEx (0.140), and between UM and GameEx (0283) as presented in table (4).

Table (4): Confirmation of hypotheses

H#	IV→DV	Hypotheses	Supported
H1	UX→HM	UX positively influence the HM	Yes
H2	UX→UM	UX positively influence the UM	Yes
H3	GE→HM	GE positively influence the HM	Yes
H4	GE→UM	GE positively influence the UM	Yes
H5	HM→GameEx	HM positively influence the GameEx	Yes
H6	UM→GameEx	UM positively influence the GameEx	Yes
H7	PP→HM, GameEx	The influence of PP is partially and positively mediated within the HM on GameEx	Yes
H8	PP→UM, GameEx	The influence of PP is partially and positively mediated within the UM on GameEx	Yes
H9	GameEx→CA	GameEx positively influence the CA	Yes
H10	CA→CBE	CA positively influence the CBE	Yes

DISCUSSION

The present work was based on proposing a gamified framework, which end aim was to foster the customer's brand engagement. The study investigated the designed gamified system effect on psychological motivation, and eventual enhanced gameful experience through the use of UX design and proper game elements. Moreover, better brand engagement was monitored through evaluating the effect of player personality as a moderating variable. Accordingly, this research allowed digging in those overlapping layered areas of information systems, games and gamification, through holistically assessing the relationship between gamification/motivational information systems and hedonic and utilitarian motivations. This novel approach is different from previous researches, which adopted user centered design concepts in their gamification frameworks, focusing on the user experience concepts for enhancing positive gameful experience (e.g. kumar, 2013; Gears & Braun, 2013; Popa, 2013).

A rich literature review revealed a lack of conceptual evidence in terms of how gamification influences game experience, including both hedonic and utilitarian motivations (Koivisto & Hamari, 2019). Results reported from previous researches, limited their discussion on customized or even single or individualized feature of the gamified elements such as badges, points, storytelling/narrative or leaderboards (Kim et al., 2015), (Hanus& Fox, 2015; Sailer et al., 2017; Thom et al., 2012), (Mekler et al., 2017; Thom et al., 2012), (Bormann & Greitemeyer, 2015), (Hanus & Fox, 2015; Mekler et al., 2017; and Sailer et al., 2017). In controversy, this present work focused on a more atomized analysis, in terms of HM and UM, in an attempt to explain the mechanisms of how gamification process and variable elements affect users' motivations towardsenhanced brand engagement.

Furthermore, several studies though spending a great effort on evaluating the role of the game elements in a specific website, overlooked their effect on users' motivation (Almarshedi et al., 2017; Alexiou & Schippers, 2018; Toda et al., 2019; Xu & Zhi, 2017). On the other hand, one of the critical goals in the present study was to evaluate the motivation effect on the customer in its proposed framework. This conforms with similar studies (López et al., 2016; Kim, 2006; Stock et al., 2014; Chakraborty & Soodan, 2019), who built their evaluation on inspecting the HM and UM and their impact on the users' performance within a website.

From a broader perspective, this study can be considered a comprehensive research, since it examined its proposed gamification framework, with its elements built on the users' experience, performing specifically assigned games in relation to their effect on psychological motivations, and to a greater extent on HM and UM and eventually on the whole gameful experience.

In the literature, a gap was discovered in regard to measuring the effect of the gameful experience of customers' attitude in the marketing, despite the numerous reported works developing more than one scale. They limited their measurements to the users gameful experience (IJsselsteijn et al., 2008; Brockmyer et al., 2009;Charlene et al., 2008; Eppmann et al., 2018; Högberg et al., 2019; Liu & Santhanam, 2015).Therefore, this work succeeded in overcoming this pitfall through providing an evidence supported answer regarding the relationship between psychological motivations and gameful experience moderated by the added feature of the player personality effect.

Last but not least, an important neglected combined effect of the motivation and engagement of customers in changing customer attitude towards better brand engagement using gamification, was noticed since each factor was individually studied (e.g. Eisingerich et al., 2019; Hammedi et al., 2017; Robson et al., 2016; Childers et al., 2001; López et al., 2016). This was addressed in this present study and conforms with O'Brien (2010), since it used both experimental and survey methods, which fostered the alignment of the motivation and engagement with the other framework variables and supported the positive results outcomes.

CONCLUSION

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Gamification has revolutionized services, software and systems enhancement through their effect on users' engagement and motivations. This was undoubtedly attributed to the inherited rationale that enjoyment associated with gaming, and its successful integration within a system, will exert an expected effect on psychological motivation and eventual better engagement. However, scarcity exists within the literature regarding the employment of gamification mechanics and resulting motivation towards brand engagement.

This present study can be identified as the first work filling this gap, through holistically measuring and investigating the effect of the gamified game elements and the overall user experience, and the positive effect of the gameful experience on fostering brand engagement.

The main important findings achieved in this study, is to provide a comprehensive gamified framework assessing the relationships between three different variables and their combined effect. From the present results, it can be concluded that although user experience and game elements have positive effects on HM and UM, yet game elements effect has a weaker impact if compared with the user experience. An additional arm is the player personality and its positive effect on motivation through mediating its relationship on the gameful experience. In conclusion, a customer attitude towards a brand is positively affected during experiencing a gameful experience and will eventually result in active enhanced brand engagement.

FUTURE WORK

The concept of gamification is a rich field of research that has extensively gained popularity in the last decade. The present study falls in the center of the relevant research niche with eventual radiation towards new potential paths. Active expansion in different areas are recommendations derived from this work including: *First*, benefiting from the advantage of gamification in motivation and engagement, will eventually foster the use of this framework in the field of education; *Second*, extensive data analysis stressing on meticulously assessing the impact of each element through granular data evaluation, would enrich the starving literature specifically regarding the effect of this framework on the player's personality and its expected outcome on motivation. *Third*, the social aspect and its influence on the player's personality and the gameful experience should receive more experimental importance in future studies; *Fourth*, In the motivational system/gamification contexts, new research themes emerging from the diversity of the user's orientation towards a specific product or area are enhanced through gameful interactions. A more attractive domain to be studied is observing the relationship developed between the game elements and the player personality through investigating more personalized gamification systems. Last but not least the effect of gamification on changing the consumer behavior towards a brand should be evidenced to broaden the opportunities of creating a subtle bond between consumers and specific brands or service.

REFERENCES

Ajzen, I. (2008), "Consumer attitudes and behavior", In C. P. Haugtvedt, P. M. Herr & F. R. Cardes (Eds.), Handbook of Consumer Psychology, (pp. 525-548), New York: Lawrence Erlbaum Associates.

Ajzen, I., & Fishbein, M. (1977), "Attitude-behavior relations: A theoretical analysis and review of empirical research", Psychological Bulletin, (84), (pp. 888- 918).

Alexiou, A., & Schippers, M. C. (2018), "Digital game elements, user experience and learning: A conceptual framework", Education and Information Technologies. doi:10.1007/s10639-018-9730-6.

Almarshedi, A., Wanick, V., & Wills, G. (2017), "Gamification and Behavior, Gamification - Using Game Elements in Serious Contexts", Switzerland: Springer International Publishing Switzerland, (pp. 19–30). doi: 10.1007/978-3-319-45557-0.

Almarshedi, A., Wills, G. B., Wanick, V. &Ranchhod, A. (2015), "SGI: A Framework for Increasing the Sustainability of Gamification Impact", International Journal of Infonomics (IJI), 8(June), (pp. 1044–1052).

Annetta, L. A. (2010), "The "I's" have it: A framework for serious educational game design", Review of General Psychology, Vol. (14), No. (2), (pp. 105-112). Retrieved from: http://dx.doi.org/10.1037/a0018985.

Antin, J., & Churchill, E. F. (2011), "Badges in social media: A social psychological perspective", Paper presented at the CHI 2011, Vancouver.

Asshidin, N. H. N., Abidin, N., &Borhan, H. B. (2016), "Consumer Attitude and Uniqueness towards International Products", Procedia Economics and Finance, (35), (pp. 632–638). Reterived from: https://doi.org/10.1016/s2212-5671(16)00077-0.

Bakkes, S., Tien Tan, C., & Pisan, Y. (2012), "Personalised gaming", Proceedings of The 8th Australasian Conference on Interactive Entertainment Playing the System - IE '12, ACM, (pp. 1–10). Retrieved from: http://doi.org/10.1145/2336727.2336731.

Barata, G., Gama, S., Jorge, J., & Gonçalves, D. (2017), "Studying student differentiation in gamified education: A long-term study", Computers in Human Behavior, (71), (pp. 550 – 585).

Barbopoulos, I., & Johansson, L.O. (2016), "A multi dimensional approach to consumer motivation: exploring economic, hedonic, and normative consumption goals", Journal of Consumer Marketing, Vol. (33), No.(1), (pp. 75–84). doi:10.1108/jcm-08-2014-1091.

Bargas-Avila, J.A., &Hornbæk, K. (2011), "Old wine in new bottles or novel challenges: a critical analysis of empirical studies of user experience", In: Proceedings of the SIGCHI Conference on Human Factors in Computing System, (pp. 2689–2698), ACM.

Citation: Hend El Shoubashy et al., 2020. Gamification Effect on Brand Engagement: A Pilot Study. Australian Journal of Basic and Applied Sciences, 14(11): 37-56. DOI: 10.22587/ajbas.2020.14.11.5

Bartle, R. (1996), "Hearts, clubs, diamonds, spades: Players who suit MUDs", Journal of MUD Research, Vol. (1), No. (1), (pp. 19).

Bartle, R. (2005), "Virtual Worlds: Why People Play", Massively Multiplayer Game Development 2, (1).

Bateman, C. M., & Boon, R. (2006), "21st Century Game Design (Game Development Series)", Charles River Media.

Bateman, C., Lowenhaupt, R., &Nacke., L. E. (2011), "Player Typology in Theory and Practice", Proceedings of DiGRA 2011.

Batra, R. &Ahtola, O. T. (1990), " Measuring the hedonic and utilitarian sources of consumer attitudes", Marketing Letters, Vol. (2), No. (2), (pp.159-170).

Bedwell, W. L., Pavlas, D., Heyne, K., Lazzara, E. H., & Salas, E. (2012), "Toward a taxonomy linking game attributes to learning: An empirical study", Simulation & Gaming, Vol. (43), No. (6), (pp. 729-760). Retrieved from: http://dx.doi.org/10.1177/1046878112439444.

Bevan, N., & Macleod, M. (1994), "Usability measurement in context", Behavior Information Technology, Vol. (13), No. (1–2), (pp. 132–145).

Bjoerk, S. &Holopainen, J. (2005), "Patterns in Game Design", Charles River Media Inc..

Blackwell, D. R., Miniard W. P., Engel F. J. (2001), "Consumer Behavior", Ninth Edition, South Western - Thomson Learning.

Bloch, P. H. &Richins, M. L. (1983), " Shopping without purchase: An investigation of consumer browsing behavior", In Advances in Consumer Research (Bagozzi, R.P. and Tybout, A.M. Eds.), (pp. 389-393), Vol. (10), Association for Consumer Research, Ann Arbor, Michigan.

Bloch, P.H. & Bruce, G.D. (1984), "Product involvement as leisure behavior", In Advances in Consumer Research (Kinnear, T.C. Ed.), (pp. 197-202), Vol. (11), Association for Consumer Research, Ann Arbor, Michigan.

Bormann, D., & Greitemeyer, T. (2015), "Immersed in virtual worlds and minds: Effects of in-game storytelling on immersion, need satisfaction, and affective theory of mind", Social Psychological and Personality Science, Vol. (6), No. (6), (pp. 646–652).

Briggs, T. (2010), "Social Media's Second Act: Toward Sustainable Brand Engagement", Design Management Review, Vol. (21), No. (1), (pp. 46-53).

Brockmyer, J. H., Fox, C. M., Curtiss, K. A., McBroom, E., Burkhart, K. M. &Pidruzny, J. N. (2009), "The development of the Game Engagement Questionnaire: A measure of engagement in video game-playing", Journal of Experimental Social Psychology, Vol. (45), No. (4), (pp. 624-634).

Brodie, R. J., Hollebeek, L. D., Juric, B., & Ilic, A. (2011), "Customer Engagement: Conceptual Domain, Fundamental Propositions, and Implications for Research", Journal of Service Research, Vol. (14), No. (3), (pp. 252–71).

Bui, M., & Kemp, E. (2013), "E-tail emotion regulation: examining online hedonic product purchases", Int. J. Retail Distrib. Manag., (41), (pp. 155–170).

Bunchball Inc. (2013), "Gamification: A Cure For The Healthcare Industry?".

Burguillo, J. C. (2010), "Using game theory and Competition-based Learning to stimulate student motivation and performance", Computers & Education, Vol. (55), No. (2), (pp. 566-575). Retrieved from: http://dx.doi.org/10.1016/j.compedu.2010.02.018.

Busch, M., Mattheiss, E., Orji, R., Fröhlich, P., Lankes, M., &Tscheligi, M. (2016), "Player Type Models – Towards Empirical Validation", Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems - CHI EA '16, ACM, (pp. 1835–1841). Retrieved from: http://doi.org/10.1145/2851581.2892399

Busch, M., Mattheiss, E., Orji, R., Marczewski, A., Hochleitner,W., Lankes, M., Nacke, L. E., &Tscheligi, M. (2015), "Personalization in serious and persuasive games and gamified interactions", In Proceedings of the 2015 Annual Symposium on Computer-Human Interaction in Play, CHI PLAY '15, (pp. 811–816), New York, NY, USA. ACM.

Casual Games Association (2011), "Smart gamification: Seven core concepts for creating compelling experiences", [Last Accessed 2 June, 2020], Retrieved from: http://casualconnect.org/lectures/business/smart-Gamification-seven-core-concepts-forcreating-compelling-experiences-amy-jo-kim.

Chakraborty, S. &Soodan, V. (2019), "Examining utilitarian and hedonic motivations in online shopping in India: Moderating effect of product browsing behavior", International Journal of Recent Technology and Engineering, Vol. (8), No. (1-2), (pp. 117–125).

Charlene, J., Cox, A. L., Cairns, P., Dhoparee, S., Epps, A., Tijs, T., & Walton, A. (2008), "Measuring and Defining the Experience of Immersion in Games", International Journal of Human-Computer Studies, Vol. (66), No. (9), (pp. 641–661).

Chen, W. & Chen, C. (2017), "The Role of Utilitarian and Hedonic Values on Users' Continued Usage and Purchase Intention in a Social Commerce Environment", Journal of Economics and Management, Vol. (13), No. (2), (pp. 193–220).

Childers, T.L., Carr, C.L., Peck, J. & Carson, S. (2001), "Hedonic and utilitarian motivations for online retail shopping", Journal of Retailing, Vol. (77), No. (4), (pp. 511-535).

Chiu, H. C., Hsieh, Y. C., Li, Y. C., & Lee, M. (2005), "Relationship Marketing and Consumer Switching Behavior", Journal of Business Research, (58), (pp. 1681-1689).

Costa, J. P., Wehbe, R. R., Robb, J., &Nacke, L. E. (2013), "Time's Up: Studying Leaderboards For Engaging Punctual Behaviour", Paper presented at the Gamification 2013: 1st International Conference on Gameful Design, Research, and Applications, Stratfort. Retrieved from: http://dx.doi.org/10.1145/2583008.2583012.

Cottrell, S. P. (2003), "Consumer Attitudes", (pp. 26–67).

Crumlish, C., & Malone, E. (2009), "Designing Social Interfaces: Principles, Patterns, and Practices for Improving the User Experience", Yahoo Press.

Citation: Hend El Shoubashy et al., 2020. Gamification Effect on Brand Engagement: A Pilot Study. Australian Journal of Basic and Applied Sciences, 14(11): 37-56. DOI: 10.22587/ajbas.2020.14.11.5

Darin, T., Coelho, B., & Borges, B. (2019), "Which Instrument Should I Use? Supporting Decision-Making About the Evaluation of User Experience", Lecture Notes in Computer Science, (pp. 49–67). doi:10.1007/978-3-030-23535-2_4.

de Normalisation, O.I.: ISO 9241-11 (2018), Saatavissa: https://www.iso.org/obp/ui/#iso:std: iso,9241(11).

Deci, E. L., & Ryan, R. M. (1991), "A motivational approach to self: Integration in personality", In R. Dienstbier (Ed.), Nebraska Symposium on Motivation, Vol. (38). Perspectives on motivation, (pp. 237-288). Lincoln: University of Nebraska Press.

Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994), "Facilitating Internalization: The Self-Determination Theory Perspective", Journal of Personality 62, (1), (pp. 119–142). Retrieved from: http://doi.org/10.1111/j.1467-6494.1994.tb00797.x

Deterding, S., Dixon, D., Khaled, R., &Nacke, L. (2011), "From game design elements to gamefulness: defining gamification", In Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments, (pp. 9-15). ACM.

Domínguez, A., Saenz-de-Navarrete, J., de-Marcos, L., Fernández-Sanz, L., Pagés, C., & Martínez-Herráiz, J. (2013), "Gamifying Learning Experiences: Practical Implications and Outcomes", Computers & Education, (63), April, (pp. 380–92).

Dweck, C. S. (1986), "Motivational processes affecting learning", American Psychologist,Vol. (41), No. (10), (pp. 1040-1048). Retrieved from: http://dx.doi.org/10.1037/0003-066x.41.10.1040.

Eisingerich, A. B., Marchand, A., Fritze, M. P. & Dong, L. (2019), "Hook vs. hope: How to enhance customer engagement through gamification", International Journal of Research in Marketing. Retrieved from: https://doi.org/10.1016/j.ijresmar.2019.02.003.

Elson, M., Breuer, J., &Quandt, T. (2014), "Know thy player: An integrated model of player experience for digital games research", In: Angelides, M.C., Agius, H. (eds.) Handbook of Digital Games, (pp. 362–387), Wiley, Hoboken.

Eppmann, R., Bekk, M., & Klein, K. (2018), "Gameful Experience in Gamification: Construction and Validation of a Gameful Experience Scale [GAMEX]", Journal of Interactive Marketing, (43), (pp. 98–115). doi:10.1016/j.intmar.2018.03.002.

Ferro, L. S.,Walz, S. P., &Greuter, S. (2013), "Towards personalised, gamified systems: an investigation into game design, personality and player typologies", In Proceedings of The 9th Australasian Conference on Interactive Entertainment Matters of Life and Death -IE '13, (pp. 1–6), New York, New York, USA. ACM Press.

Fishbein, M., & Ajzen, I. (1975), "Belief, attitude, intention, and behavior: An introduction to theory and research", Reading, MA: Addison-Wesley.

Fitz-Walter, Z., Tjondronegoro, D., & Wyeth, P. (2011), "Orientation Passport: Using gamification to engage university students", In Proceedings of the 23rd Australian Computer Human Interaction Conference on - OzCHI '11, (pp. 122–125), New York, New York, USA: ACM Press. doi:10.1145/2071536.2071554

Fournier, S. (1998), "Consumers and Their Brands: Developing Relationship Theory in Consumer Research", Journal of consumer research, Vol. (24), No. (4), (pp. 343-353).

Gagne, M., & Deci, E. L. (2005), "Self-determination theory and work motivation", Journal of Organizational Behavior, (26), (pp. 331–362).

Gambetti, R. C., Graffigna, G., &Biraghi, S. (2012), "The grounded theory approach to consumer-brand engagement", International Journal of Market Research, Vol. (54), No. (5), (pp. 659-687).

Ganglbauer, E., Schrammel, J., Schwarz, S., &Tscheligi, M. (2007), "Applying psychophysiological methods for measuring user experience: possibilities, challenges and feasibility", In: Workshop on User Experience Evaluation Methods in Product Development.

Gears, D. & Braun, K. (2013), "Gamification in Business: Designing Motivating Solutions to Problem Situations", Chi-Conference on Human Factors in Computing Systems, (pp. 5). doi: 10.1145/2468356.2479662.

Gensler, S., Völckner, F., Liu-Thompkins, Y., &Wiertz, C. (2013), "Managing Brands in the Social Media Environment", Journal of Interactive Marketing, Vol. (27), No. (4), (pp. 242-256).

Gentile, C., Spiller, N., &Noci, G. (2007), "How to sustain the user experience: an overview of experience components that co-create value with the customer", Eur. Manag. J., Vol. (25), No. (5), (pp. 395–410).

Gil, B., Cantador, I., & Marczewski, A. (2015), "Validating gamification mechanics and player types in an e-learning environment", In Conole, G., Klobuˇcar, T., Rensing, C., Konert, J., &Lavoué, E., editors, Design for Teaching and Learning in a Networked World, (pp. 568–572), Cham. Springer International Publishing.

González, C., Toledo, P., & Muñoz, V. (2016), "Enhancing the Engagement of Intelligent Tutorial Systems through Personalization of Gamification", International Journal of Engineering Education (IJEE), Vol. (32), No. (1), (pp. 532–541).

Gray, J. A. (1981), "A critique of Eysenck's theory of personality", In H. J. Eysenck (Ed.), A model for personality, (pp. 246–276), Berlin: Springer.

Hamari, J. (2013), "Transforming homo economicus into homo ludens: A field experiment on gamification in a utilitarian peer-to-peer trading service", Electronic commerce research and applications, Vol. (12), No. (4), (pp. 236-245). Retrieved from: http://dx.doi.org/ 10.1016/j.elerap.2013.01.004.

Hamari, J. (2017), "Do badges increase user activity? A field experiment on the effects of gamification", Computers in Human Behavior, (71), (pp. 469–478). doi: 10.1016/j.chb.2015.03.036.

Hamari, J. & Koivisto, J. (2015), "Why do people use gamification services?", International Journal of Information Management, Elsevier Ltd, Vol. (35), No. (4),(pp. 419–431). doi: 10.1016/j.ijinfomgt.2015.04.006.

Citation: Hend El Shoubashy et al., 2020. Gamification Effect on Brand Engagement: A Pilot Study. Australian Journal of Basic and Applied Sciences, 14(11): 37-56. DOI: 10.22587/ajbas.2020.14.11.5

Hamari, J., Koivisto, J., &Pakkanen, T. (2014), "Do persuasive technologies persuade?– A review of empirical studies", In A. Spagnolli, L. Chittaro, & L. Gamberini(Eds.), Persuasive technology, LNCS 8462, (pp. 118–136). Switzerland: Springer International Publishing.

Hammedi, W., Leclerq, T., & Van Riel, A. C. R. (2017), "The Use of Gamification Mechanics to Increase Employee and User Engagement in Participative Healthcare Services: A Study of Two Cases", Journal of Service Management, Vol. (28), No. (4), (pp. 640–61).

Hanus, M. D., & Fox, J. (2015), "Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance", Computers & Education, (80), (pp. 152–161)

Hellweger, S., & Wang, X. (2015), "What is user experience really: towards a UX conceptual framework", arXiv preprint arXiv:1503.01850.

Högberg, J., Hamari, J. &Wästlund, E. (2019), "Gameful Experience Questionnaire (GAMEFULQUEST): an instrument for measuring the perceived gamefulness of system use, User Modeling and User-Adapted Interaction", Springer Netherlands. doi: 10.1007/s11257-019-09223-w.

Högberg, J., Ramberg, M. O., Gustafsson, A., &Wästlund, E. (2019), "Creating brand engagement through in-store gamified customer experiences", Journal of Retailing and Consumer Services, (50), (pp. 122–130). Retrieved from: https://doi.org/10.1016/j.jretconser.2019.05.006.

Hollebeek, L. (2011), "Exploring customer brand engagement: definition and themes", Journal of strategic Marketing, Vol. (19), No. (7), (pp. 555-573).

Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014), "Consumer brand engagement in social media: Conceptualization, scale development and validation", Journal of interactive marketing, Vol. (28), No. (2), (pp. 149-165). doi:10.1016/j.intmar.2013.12.002.

Hsu, C. L., & Chen, M. C. (2018a)," How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love", Computers in Human Behavior, Vol. (88), 2018, (pp.121-133), ISSN 0747-5632, retrieved from: https://doi.org/10.1016/j.chb.2018.06.037. (http://www.sciencedirect.com/science/article/pii/S0747563218303200).

Hsu, C. L., & Chen, M. C. (2018b), "How does gamification improve user experience? An empirical investigation on the antecedences and consequences of user experience and its mediating role", Technological Forecasting and Social Change, (132), (pp. 118–129). Retrieved from: https://doi.org/10.1016/j.techfore.2018.01.023.

Hung, Y.-H., & Parsons, P. (2018), "Affective engagement for communicative visualization: quick and easy evaluation using survey instruments", In: Visualization for Communication (VisComm).

Huotari, K., & Hamari, J. (2012), "Defining gamification: a service marketing perspective", In Proceeding of the 16th international academic MindTrek conference, MindTrek '12, (pp. 17-22), New York, USA, ACM.

Huotari, K., & Hamari, J. (2017), "A definition for gamification: anchoring gamification in the service marketing literature", Electronic Markets, Vol. (27), No. (1), (pp. 21–31). Retrieved from: https://doi.org/10.1007/s12525-015-0212-z.

Huta, V., & Waterman, A. S. (2014), "Eudaimonia and itsdistinction from hedonia: Developing a classificationand terminology for understanding conceptual andoperational definitions", Journal of Happiness Studies, (15), (pp. 1425–1456).

Ijsselsteijn, W., De Kort, Y., Poels, K., Jurgelionis, A., & Bellotti, F. (2007), "Characterising and measuring user experiences in digital games", In: International Conference on Advances in Computer Entertainment Technology, ACE 2007, Salzburg, Austria.

Ijsselsteijn, W., Van Den Hoogen, W., Klimmt, C., De Kort, Y., Lindley, C., Mathiak, K., Poels, K., Ravaja, N., Turpeinen, M., &Vorderer, P. (2008), "Measuring the experience of digital game enjoyment", In: Proceedings of the 6th International Conference on Methods and Techniques in Behavioral Research: Measuring Behavior 2008, (pp. 88–89), Maastricht, The Netherlands.

Jarvenpaa, S., & Todd, P. A. (1997), "Consumer reactions to electronic shopping on the world wide web", International Journal of Electronic Commerce, Vol. (1), No. (2), (pp. 59–88).

Jia, Y., Xu, B., Karanam, Y., &Voida, S. (2016), "Personality-targeted gamification: A survey study on personality traits and motivational affordances", In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, CHI '16, (pp. 2001–2013), New York, NY, USA. ACM.

Johnson, D., Wyeth, P., Sweetser, P., &Jgardner, J. (2012), "Personality, genre and videogame play experience", Proceedings of the 4th International Conference on Fun and Games - FnG '12, ACM, (pp. 117–120). Retrieved from: http://doi.org/10.1145/2367616.2367633.

Johnson, F. A. (1993), "Dependency and Japanese socialization", New York: NYU Press.

Kaczmarek, L. D. (2017), "Hedonic Motivation", Encyclopedia of Personality and Individual Differences, (March). doi: 10.1007/978-3-319-28099-8.

Kapp, K. M. (2012), "The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education", Pfeiffer, San Francisco.

Kaptein, M., De Ruyter, B., Markopoulos, P., &Aarts, E. (2012), "Adaptive Persuasive Systems: A Study of Tailored Persuasive Text Messages to Reduce Snacking", ACM Transactions on Interactive Intelligent Systems 2, (2), (pp. 1–25). Retrieved from: http://doi.org/10.1145/2209310.2209313.

Citation: Hend El Shoubashy et al., 2020. Gamification Effect on Brand Engagement: A Pilot Study. Australian Journal of Basic and Applied Sciences, 14(11): 37-56. DOI: 10.22587/ajbas.2020.14.11.5

Kaptein, M., Markopoulos, P., De Ruyter, B., &Aarts, E. (2015), "Personalizing persuasive technologies: Explicit and implicit personalization using persuasion profiles", International Journal of Human Computer Studies, (77), (pp. 38–51). Retrieved from: http://doi.org/10.1016/j.ijhcs.2015.01.004.

Kelle, S., Klemke, R., & Specht, M. (2013), "Effects of game design patterns on basic life support training content", Journal of Educational Technology & Society, Vol. (16), No. (1), (pp. 275-285). Retrieved from: http://dx.doi.org/10.1504/ijtel.2011.045452.

Keller, K. L. (1993), "Conceptualizing, Measuring, and Managing Customer-Based Brand Equity", Journal of Marketing, Vol. (57), No. (1), (pp. 1–22). doi:10.1177/002224299305700101

Kim, H. (2006), "Using Hedonic and Utilitarian Shopping Motivations to Profile Inner City Consumers", Journal of Shopping Center Research, Vol. (13), No. (1), (pp. 57–79).

Kim, K., Schmierbach, M. G., Chung, M. Y., Fraustino, J. D., Dardis, F., & Ahern, L. (2015), "Is it a sense of autonomy, control, or attachment? Exploring the effects of in-game customization on game enjoyment", Computers in Human Behavior, (48), (pp. 695–705).

Kober, S. E., &Neuper, C. (2013), "Personality and Presence in Virtual Reality: Does Their Relationship Depend on the Used Presence Measure?", International Journal of Human-Computer Interaction 29, (1), (pp. 13–25). Retrieved from: http://doi.org/10.1080/10447318.2012.668131

Koivisto, J., & Hamari, J. (2014), "Demographic differences in perceived benefits from gamification", Computers in Human Behavior, (35), (pp. 179–188). doi: 10.1016/j.chb.2014.03.007.

Koivisto, J., & Hamari, J. (2019), "The rise of motivational information systems: A review of gamification literature", International Journal of Information Management, (45), (pp. 191–210).

Kotler, P. (2000), "Marketing Management: Analysis Planning Implementation, and Control", 10th ed., Prentice-Hall Inc.: Sadeliver, NJ, USA.

Kumar, N. (2013), "A framework for designing gamification in the enterprise", Infosys Labs Briefings, Vol. (11), No. (3), (pp. 8–13).

Landers, R. N. (2014), "Developing a Theory of Gamified Learning: Linking Serious Games and Gamification of Learning", Simulation & Gaming, Vol. (45), No. (6), (pp. 752–68).

Landers, R. N., & Landers, A. K. (2014), "An Empirical Test of the Theory of Gamified Learning: The Effect of Leaderboards on Time-on-Task and Academic Performance", Simulation & Gaming, Vol. (45), No. (6), (pp. 769-785). Retrieved from: http://dx.doi.org/10.1177/1046878114563662.

Landers, R. N., Tondello, G. F., Kappen, D. L., Collmus, A. B., Mekler, E. D., &Nacke, L. E. (2018), "Defining gameful experience as a psychological state caused by gameplay: Replacing the term 'Gamefulness' with three distinct constructs", Int. J. Hum. Comput.

LaSalle, D., & Britton, T.A. (2003), "Priceless: Turning Ordinary Products into Extraordinary Experiences", Harvard Business School Press, Boston.

Lindenberg, S. & Steg, L. (2007), "Normative, gain and hedonic goal frames guiding environmental behavior", Journal of Social Issues, Vol. (63), No. (1), (pp. 117-137).

Liu, D., & Santhanam, R. (2015), "Towards meaningful engagement: Gamification designs for gameful interaction with information systems", SSRN Electronic Journal, Vol. (8), No. (2), (pp. 128–140). doi:10.2139/ssrn.2521283.

López, F. J. M., García, C. P., Abad, J. C. G., &Ardura, I. R. (2016), "Hedonic motivations in online consumption behaviour", International Journal of Business Environment, Vol. (8), No. (2), (pp. 121). doi:10.1504/ijbe.2016.076628.

Lu, H. P. & Ho, H. C. (2020), "Exploring the impact of gamification on users' engagement for sustainable development: A case study in brand applications' Sustainability", (Switzerland), Vol. (12), No. (10). doi: 10.3390/su12104169.

Marache-Francisco, C. &Brangier, E. (2013), "The gamification experience: UXD with a gamification background", Emerging Research and Trends in Interactivity and the Human-Computer Interface, (January), (pp. 205–223). doi: 10.4018/978-1-4666-4623-0.ch010.

Marczewski, A. (2014), "Gamification design vs game design", [Last Accessed 1 February, 2020], retrieved from: http://www.gamified.uk/2014/03/25/gamification-design-vs-game-design/.

Marczewski, A. (2015), "Even Ninja Monkeys Like to Play: Gamification, Game Thinking and Motivational Design", CreateSpace Independent Publishing Platform.

Mekler, E.D., Brühlmann, F., Tuch, A.N., &Opwis, K. (2017), "Towards understanding the effects of individual gamification elements on intrinsic motivation and performance", Computer Human Behavior, (71), (pp. 525–534). Retrieved from: https://doi.org/10.1016/j.chb.2015.08.048.

Mora, A., Riera, D., Gonzalez, C., &Arnedo-Moreno, J. (2015), "A Literature Review of Gamification Design Frameworks", 7th International Conference on Games and Virtual Worlds for Serious Applications (VS-Games), Skovde, (pp. 1-8). doi: 10.1109/VS-GAMES.2015.7295760 framework;Games;Context;Bibliographies;Proposals;Ethics;Design methodology}, Retrieved from: http://ieeexplore.ieee.org/stamp/stamp.jsptp=&arnumber 7295760&isnumber=7295691.

Mora, A., Riera, D., González, C., &Arnedo-Moreno, J. (2017), "Gamification: a systematic review of design frameworks", Journal of Computing in Higher Education. Springer US, Vol. (29), No. (3), (pp. 516–548). doi: 10.1007/s12528-017-9150-4.

Myers, I. B. (1962), "The Myers-Briggs Type Indicator", Consulting Psychologists Press, Palo Alto, CA.

Nacke, L. E. & Deterding, S. (2017), "The maturing of gamification research", Computers in Human Behavior, (71), (pp. 450–454). doi:10.1016/j.chb.2016.11.062.

Citation: Hend El Shoubashy et al., 2020. Gamification Effect on Brand Engagement: A Pilot Study. Australian Journal of Basic and Applied Sciences, 14(11): 37-56. DOI: 10.22587/ajbas.2020.14.11.5

Nacke, L. E., Bateman, C., &Mandryk, R. L. (2011), "BrainHex: Preliminary Results from a Neurobiological Gamer Typology Survey", In Proceedings of the 10th International Conference on Entertainment Computing - ICEC 2011, Springer Berlin Heidelberg, (pp. 288–293). Retrieved from: http://doi.org/10.1007/978-3-642-24500-8_31.

Nacke, L. E., Bateman, C., &Mandryk, R. L. (2014), "BrainHex: A Neurobiological Gamer Typology Survey", Entertainment Computing 5, (1), (pp. 55–62). Retrieved from: http://doi.org/10.1016/j.entcom.2013.06.002.

Nacke, L. E., Drachen, A., & Goebel, S. (2010), "Methods for Evaluating Gameplay Experience in a Serious Gaming Context", In International Journal of Computer Science in Sport, Vol. (9), No. (2), Darmstadt, Germany. Retrieved from: http://iacss.org/index.php?id=96.

Nanjari Wyss, P. A. (2019), "Gamified Surveys : what game mechanics are driving people's motivation?", University of Twente.

Ng, Y., Khong, C. W.,& Nathan, R. J. (2018), "Evaluating affective user-centered design of video games using qualitative methods", Int. J. Comput. Games Technol. 2018.

Nicholls, J. G. (1984), "Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance", Psychological Review, Vol. (91), No. (3), (pp. 328-346). Retrieved from: http://dx.doi.org/10.1037/0033-295x.91.3.328.

Nielsen, J. (1994), "Usability Engineering", Elsevier, San Diego.

Nix, G., Ryan, R. M., Manly, J. B., & Deci, E. L. (1999), "Revitalization through self-regulation: The effects of autonomous and controlled motivation on happiness and vitality", Journal of Experimental Social Psychology, (35), (pp. 266-284).

Nov, O., &Arazy, O. (2013), "Personality-targeted design: theory, experimental procedure, and preliminary results", Proceedings of the 2013 Conference on Computer Supported Cooperative Work - CSCW '13, ACM, (pp. 977–984). Retrieved from: http://doi.org/10.1145/2441776.2441887

O'Brien, H. L. (2010), "The influence of hedonic and utilitarian motivations on user engagement: The case of online shopping experiences", Interacting with Computers, Vol. (22), No. (5), (pp. 344–352). doi:10.1016/j.intcom.2010.04.001.

Orji, R., Mandryk, R. L., Vassileva, J., & Gerling, K. M. (2013), "Tailoring persuasive health games to gamer type", In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, CHI '13, (pp. 2467–2476), New York, NY, USA. ACM.

Orji, R., Mandryk, R., &Vassileva, J. (2014a), "Gender and persuasive technology: Examining the persuasiveness of persuasive strategies by gender groups", In The 9th International Conference on Persuasive Technology (PERSUASIVE 2014), (pp. 48–52).

Orji, R., Vassileva, J., &Mandryk, R. L. (2014b), "Modeling the efficacy of persuasive strategies for different gamer types in serious games for health", User Modeling and User- Adapted Interaction, Vol. (24), No. (5), (pp. 453–498).

Orji, R., Nacke, L. E., & Di Marco, C. (2017), "Towards personality-driven persuasive health games and gamified systems", In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems, CHI '17, (pp. 1015–1027), New York, NY, USA. ACM.

Overby, J. W., & Lee, E. J. (2006), "The effects of utilitarian and hedonic online shopping value on consumer preference and intentions", Journal of Business Research, Vol. (59), No. (10–11), (pp. 1160–1166).

Ozkara, B. Y., Ozmen, M., & Kim, J. W. (2017), " Examining the Effect of Flow Experience on Online Purchase: A Novel Approach to the Flow Theory Based on Hedonic and Utilitarian Value", Journal Retailing and Consumer Services, (37), (pp. 119-131).

Peabody, O. (1967), "Trait inferences: Evaluative and descriptive aspects", Journal of Personality and Social Psychology Monograph, (7), (2, Pt. 2, Whole No. 642).

Perner L. (2010), [Last Accessed 20 August, 2020], Reterived from: http://www.consumerpsychologist.com/cb_Attitudes.html.

Pine II, B. J., & Gilmore, J. H. (1999), "The Experience Economy", Harvard Business School Press, Boston.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003), "Common method biases in behavioral research: A critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. (88), No. (5), (pp. 879–903).

Popa, D. M. (2013), "Gamification of productivity software: A user-centered design approach", University of Copenhagen, Copenhagen. Master's Thesis.

Prahalad, C.K., & Ramaswamy, V. (2004), "Co-creation experiences: the next practice in value creation", J. Interact. Mark, Vol. (18), No. (3), (pp. 5–14).

Rajanen, D., Clemmensen, T., Iivari, N., Inal, Y., Rızvanoğlu, K., Sivaji, A., & Roche, A. (2017), "UX Professionals' Definitions of Usability and UX – A Comparison Between Turkey, Finland, Denmark, France and Malaysia", Lecture Notes in Computer Science, (pp. 218–239). doi:10.1007/978-3-319-68059-0_14.

Reeves, B., & Read, J. (2009), "Total engagement: How games and virtual worlds are changing the way people work and businesses compete", Boston, MA: Harvard Business Review Press.

Rigby, C. S. (2015), "Gamification and motivation", In: Walz, P.S., Deterding, S. (eds.) The Gameful World: Approaches, Issues, Applications, (pp. 113–138). MIT Press, Cambridge.

Ringle, C. M., Wende, S., & Will, A. (2005), "SmartPLS 2.0 M3", [Last Accessed 6 June, 2020], Retrieved from: http://www.smartpls.de/.

Robinson, D. & Bellotti, V. (2013), "A Preliminary Taxonomy of Gamification Elements for Varying Anticipated Commitment", Proceedings of CHI 2013 Workshop Designing Gamification: Creating Gameful and Playful Experiences, (pp. 69-74).

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I., & Pitt, L. (2016), "Game on: Engaging Customers and Employees Through Gamification", Business Horizons, Vol. (59), No. (1), (pp. 29–36).

Citation: Hend El Shoubashy et al., 2020. Gamification Effect on Brand Engagement: A Pilot Study. Australian Journal of Basic and Applied Sciences, 14(11): 37-56. DOI: 10.22587/ajbas.2020.14.11.5

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I., & Pitt, L. (2015), "Is it all a game? Understanding the principles of gamification", Business Horizons, Vol. (58), No. (4), (pp. 411–420). doi:10.1016/j. bushor.2015.03.006.

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I., & Pitt, L. (2014), "Understanding Gamification of Consumer Experiences", Advances in Consumer Research, (42), (pp. 352–6).

Ryan, R. M., & Deci, E. L. (2000), "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being", American psychologist, Vol. (55), No. (1), (pp. 68-78).

Ryan, R. M., Deci, E. L., &Grolnick, W. S. (1995), "Autonomy, relatedness, and the self: Their relation to development and psychopathology", In D. Cicchetti & D, J. Cohen (Eds.), Developmental psychopathology: Theoo' and methods (pp. 618-655). New York: Wiley.

Sailer, M., Hense, J., Mandl, H., &Klevers, M. (2013), "Psychological Perspectives on Motivation through Gamification", Interaction Design and Architecture(s) Journal, (19), (pp. 28–37).

Sailer, M., Hense, J.U., Mayr, S.K., & Mandl, H. (2017),"How gamification motivates: an experimental study of the effects of specific game design elements on psychological need satisfaction", Computer Human Behavior, (69), (pp. 371–380). Retrieved from: https://doi.org/10.1016/j.chb.2016.12.033.

Saunders, M., Lewis, P., & Thornhill, A. (2007), "Research methods for business students", (4th ed.), London: Prentice Hall.

Schlenker, B. R. (1978), "Attitudes as actions: social identity theory and consumer research, Advances in Consumer Research", Vol. (5), Issue. (1), (pp. 352-359).

Schmitt, B. H. (1999), "Experiential marketing", New York: The Free Press.

Schubert, E. (1999), "Measuring emotion continuously: validity and reliability of the twodimensional emotion-space", Aust. J. Psychol., Vol. (51), No. (3), (pp. 154–165).

Schunk, D. H., Pintrich, P. R. &Meece, J. L. (2010), "Motivation in education: theory, research, and applications", Pearson, Upper Saddle River.

Seaborn, K., & Fels, D. I. (2015), "Gamification in theory and action: A survey", International Journal of Human-Computer Studies, (74), (pp. 14-31). Retrieved from: http://dx.doi.org/10.1016/j.ijhcs.2014.09.006.

Shaw, C., &Ivens, J. (2005), "Building Great User Experiences", MacMillan, New York.

Sheldon, K. M., Ryan, R. M., Rawsthorne, L., &Ilardi, B. (1997), "Trait self and true self: Cross-role variation in the Big Five traits and its relations with authenticity and subjective well-being", Journal of Personality and Social Psychology, (73), (pp. 1380-1393).

Sheng, M. L., & Teo, T. S. H. (2012), "Product attributes and brand equity in the mobile domain: The mediating role of customer experience", International Journal of Information Management, Vol. (32), No. (2), (pp. 139–146). doi:10.1016/j.ijinfomgt.2011.11.017.

Slavin, R. E. (1980), "Cooperative learning", Review of Educational Research, Vol. (50), No. (2), (pp. 315-342). Retrieved from: http://dx.doi.org/10.3102/00346543050002315.

So, K. K. F., King, C., & Sparks, B. (2014), "Customer engagement with tourism brands: Scale development and validation", Journal of Hospitality & Tourism Research, Vol. (38), No.(3), (pp. 304-329).

Sprott, D., Czellar, S., & Spangenberg, E. (2009), "The importance of a general measure of brand engagement on market behavior: Development and validation of a scale", Journal of Marketing Research, Vol. (46), No. (1), (pp. 92-104).

Stock, R. M., Oliveira, P., & von Hippel, E. (2014), "Impacts of Hedonic and Utilitarian User Motives on the Innovativeness of User-Developed Solutions", Journal of Product Innovation Management, Vol. (32), No. (3), (pp. 389–403). doi:10.1111/jpim.12201.

Summers, J. D. & Young, A. G. (2016), "Gamification and brand engagement on facebook: An exploratory case study", AMCIS 2016: Surfing the IT Innovation Wave - 22nd Americas Conference on Information Systems, (October).

Swaminathan, V., Page, K.L., &Gürhan-Canli, Z. (2007), ""My" Brand or "Our" Brand: The Effects of Brand Relationship Dimensions and Self-Construal on Brand Evaluations", Journal of consumer research, Vol. (34), No. (2), (pp. 248-259).

Teo, T. (2001), "Demographic and motivation variables associated with internet usage activities", Internet Research, Vol. (11), No. (2), (pp. 125–137).

Thom, J., Millen, D., &DiMicco, J. (2012), "Removing gamification from an enterprise SNS", In: Proceedings of the ACM 2012 Conference on Computer Supported Cooperative Work. Presented at CSCW'12. ACM, Seattle, WA, (pp. 1067–1070).

Toda, A., Oliveira, W., Klock, A. C., Palomino, P. T., Pimenta, M., Gasparini, I., Shi, L., Bittencourt, I., Isotani, S., & Cristea, A. I. (2019), "A Taxonomy of Game Elements for Gamification in Educational Contexts: Proposal and Evaluation", 2019 IEEE 19th International Conference on Advanced Learning Technologies (ICALT). doi:10.1109/icalt.2019.00028.

Tondello, G. F., Wehbe, R. R., Diamond, L., Busch, M., Marczewski, A., &Nacke, L. E. (2016), "The gamification user types hexad scale", In Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play, CHI PLAY '16, (pp. 229–243), New York, NY, USA. ACM.

Upshall, D. (2020), "Developing a Taxonomy of Gamification Elemenets That Facilitate User Motivation", (July). doi: 10.13140/RG.2.2.32806.96327.

Vansteenkiste, M., Niemiec, C. P., &Soenens, B. (2010), "The development of the five mini-theories of self-determination theory: An historical overview, emerging trends, and future directions", In T. C. Urdan, & S. A. Karabenick (Eds.), The decade Ahead: Theoretical perspectives on motivation and achievement (advances in motivation and achievement, Vol. (16) A, (pp. 105-165), London: Emerald Group Publishing Limited. Retrieved from: http://dx.doi.org/10.1108/s0749-7423(2010)000016a007.

Citation: Hend El Shoubashy et al., 2020. Gamification Effect on Brand Engagement: A Pilot Study. Australian Journal of Basic and Applied Sciences, 14(11): 37-56. DOI: 10.22587/ajbas.2020.14.11.5

Verhoef, P., Lemon, K., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. (2009), "User experience creation: determinants, dynamics and management strategies", J. Retail., Vol. (85), No. (1), (pp. 31–41).

Vinerean, A. (2013), "The Influence of Hedonic and Utilitarian Motivators on Likelihood to Buy a Tourism Package", Expert Journal of Marketing, Vol. (1), No. (1), (pp. 28–37).

Vivek, S. D. (2009), "A scale of consumer engagement", Tuscaloosa: The University of Alabama.

Vivek, S. D., Beatty, S. E., Dalela, V., & Morgan, R. M. (2014), "A Generalized Multidimensional Scale for Measuring Customer Engagement", The Journal of Marketing Theory and Practice, Vol. (22), No. (4), (pp. 401-420).

Wakefield, K. L. & Inman, J. J. (2003), "Situational price sensitivity: the role of consumption occasion, social context and income", Journal of Retailing, Vol. (79), No. (4), (pp. 199-212).

Wang, H., & Sun, C. T. (2011), "Game reward systems: gaming experiences and social meanings", Paper presented at the DiGRA 2011 conference: Think Design Play, Hilversum.

Wang, W. & Benbasat, I. (2005), "Trust in and adoption of online recommendation agents", Journal of Association for Information Systems, Vol. (6), No. (3), (pp. 72-101).

Werbach, K., & Hunter, D. (2012), "For the win: How game thinking can revolutionize your business", Wharton Digital Press. Pennsylvania: Wharton Digital Press.

Werbach, K., & Hunter, D. (2015), "The gamification toolkit - dynamics, mechanics, and components for the win", Philadelphia: Wharton Digital Press.

Wright, P., & Blythe, M. (2007), "User experience research as an inter-discipline: towards a UX Manifesto", In: Law, E., Vermeeren, A., Hassenzahl, M., Blythe, M. (eds.) Proceedings of the Workshop on towards a UX Manifesto 2007, (pp. 65–70).

Xi, N. & Hamari, J. (2019), "The Relationship Between Gamification, Brand Engagement and Brand Equity", Proceedings of the 52nd Hawaii International Conference on System Sciences, (pp. 812–821). doi: 10.24251/hicss.2019.099.

Xi, N., & Hamari, J. (2020), "Does gamification affect brand engagement and equity? A study in online brand communities", Journal of Business Research, (109), (pp. 449–460). doi:10.1016/j.jbusres.2019.11.058.

Xu, X. &Zhi, H. (2017), "Study Of Game Elements Impacting On SE Course Completion Rate In MOOCs - A mixed method approach", Blekinge Institute of Technology.

Xu, Y., Poole, E. S., Miller, D. A. (2012), "This is not a one-horse race: understanding player types in multiplayer pervasive health games for youth", Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work - CSCW '12, ACM, (pp. 843–852).

Yee, N. (2007), "Motivations for play in online games", Cyber Psychology & Behavior, Vol. (9), No. (6), (pp. 772–775). doi:10.1089/cpb.2006.9.772.

Yee, N., Ducheneaut, N., & Nelson, L. (2012), "Online gaming motivations scale: development and validation", Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems - CHI '12, ACM, (pp. 2803–2806). Retrieved from: http://doi.org/10.1145/2207676.2208681

Zanjani, S. H., Milne, G. R., & Miller, E. G. (2016), "Procrastinators' Online Experience and Purchase Behavior", Journal of the Academy of Marketing Science, (44), (pp. 568-585).

Zhang, M., Guo, L., Hu, M., & Liu, W. (2017), "Influence of customer engagement with company social networks on stickiness: Mediating effect of customer value creation", International Journal of Information Management, Vol. (37), No. (3), (pp. 229-240).

Zichermann, G. & Linder, J. (2010), "Game-Based Marketing: Inspire Customer Loyalty Through Rewards, Challenges, and Contests", Wiley.

Zichermann, G., & Cunningham, C. (2011), "Gamification by design: Implementing game mechanics in web and mobile apps", O'Reilly Media, Inc.