

What's behind a scratch card? Designing a mobile application using gamification to study customer loyalty: An experimental approach

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Abstract

The use of game design elements (often called gamification) by firms to engage the customers has attracted attention in recent times. These game elements contribute to shaping up customer's motivation and loyalty. Gamification is explored from the lens of both empirical as well as an experimental methodological standpoint. There still lacks substantial evidence that explains how, and which types of rewards help to understand the customer's motivation. The study addresses this gap by designing an experimental study of 2x2 to address how gamified mobile apps used for making payments can help capture customer's loyalty by offering them rewards. Data is collected from 385 customers who have been using mobile apps to make payments in the past. The data were tested to check if gamification positively helps the user hedonic and utilitarian motivation, which then positively impacts their loyalty. The study is also moderated by type of rewards (direct cash rewards v/s indirect third party partnered rewards) on the relationship of gamification and customer loyalty mediated through motivation. The results confirm that mobile payment apps' cash rewards are more useful, especially when the degree of uncertainty in the game element is high (scratch card). Additionally, they contribute to a higher degree of utilitarian benefits to the customers. The results contribute to the extension of the self-determination theory and stimulus organism response framework as well.

Keywords: Gamification; scratch cards; mobile app; self-determination theory; stimulus organism response; experiment

1 Introduction

Technology is growing at a rapid pace. The growth pace has helped firms use technology to expand their business, reach out to a broader customer base, and motivate them to use their product/service. Technology motivates people and changes the attitude that has helped them alter their behavior. As businesses move from a physical space to an online space, the ways and means of engagement have also transformed significantly. One such mechanism that has started to gain momentum is gamification. The essence of gamification lies in controlling the user's intrinsic motivation towards various activities, commonly employing design characteristics to games (Hamari and Kovisto, 2015; Huotari and Hamari, 2012). The use of game mechanics in a non-game context is often considered the essence of gamification's operation definition in most of the studies. The most common game mechanics include points, badges, leader boards (PBL), narratives, feedback, achievements, progress bars, etc (Hamari,

2013; Bittner and Shipper, 2014). One of the many forms of these game elements can be seen in marketing, finance, customer management, healthcare, fitness, wellbeing, etc.

Gamification has emerged as a socio-technological phenomenon that can help users be motivated intrinsically, extrinsically, and socially by offering meaningful benefits through communities and social interactions. Studies have discussed how the use and implementation of game elements have helped end-users stay motivated and, more importantly, keep them hooked with the mobile application (Hamari and Kovisto, 2014; Morschheuser et al., 2018). Most of the mobile applications that use game elements are engaged in omnichannel businesses (Kim et al., 2020a). Moreover, these applications have a large degree of competition available in the online space. Thus, game elements help the firms design their mobile apps to capture the attention of their customers better and for a longer duration. Recent literature on game design reflects that most game elements are positioned in the apps to trigger either sense of hedonic motivation or utilitarian motivation of the end-user (Putri et al., 2019; Sailer et al., 2014). In simple words, the game elements help contribute to either intrinsic or extrinsic motivation of the user, which helps them spend more time with the mobile application. However, it would be unfair to generalize that a gamified mobile app would be more inclined to draw hedonic or utilitarian motivation. Thus, in reality, the sweet spot lies somewhere between the two wherein mobile apps try to balance between the two sides of the same coin.

Another matter of concern surfaced by recent literature is the selection of rewards that the app offers to its users (Sigala et al., 2019). It is seen that most of the apps that have similar business models try to imitate each other; for example, most of the fitness apps like Nike, Garmin, Fitbit, etc. use similar game elements like leader boards, badges, and missions. Similarly, mobile apps that improve work productivity use similar game principles listed in the octalysis framework (Yang et al., 2017). Thus, each mobile application that uses game elements fulfills one of the eight principles of the octalysis framework: meaning, empowerment, social influence, unpredictability, avoidance, scarcity, ownership, and accomplishment. Although each of the eight drivers has something unique to offer, the present study aims to study the seventh core driver: unpredictability and curiosity in detail (Chou, 2014).

Unpredictability has been used in marketing literature in many forms. Most of its application is seen in the retailing industry, where firms have drawn inspiration from game elements like easter eggs, rolling rewards/lottery, raffle tickets, mystery boxes, etc (Seaborn and Fels, 2015; Rodrigues et al., 2016). While firms have succeeded in using such game design elements, they have helped them gain higher sales, augment future purchases, and improve customer interactivity. It is interesting to see that while evidence proves that degree of unpredictability works, most of the evidence is empirical (Zichermann and Cunningham, 2011; Chou, 2019). While marketing literature has covered this aspect, there is also a need to understand the same from system design and psychology (Perryer et al., 2016; Nicholson, 2015). It forms the first degree of motivation for our study. Secondly, the study is inspired to understand the functional applicability of unpredictability to understand the end user's motivation and attitude towards using a mobile application. The study is grounded in a triangulation of theories viz. technology adoption research (Venkatesh, 1999, 2000; Venkatesh and Davis, 2000; Davis, 1989); theory on human motivation- social exchange theory and self-determination theory (Ryan and Deci, 2000; Deci and Ryan, 1985; Blau, 1964; Emerson, 1976); and Stimulus Organism Response (SOR) (Mehrabian and Russel, 1974; Yee, 2006; Ryan et al., 2006; Hamari et al., 2014; Deterding et al., 2011). Thirdly, the study contributes to mobile app design

literature by performing an experimental study to understand the effect of the presence/absence of gamification with the type of rewards received by using the mobile application.

We propose setting up an experimental study for a mobile app that is used to make payments to merchants and transfer money to individuals. The study further investigates how similar mobile payment apps can be designed with appropriate use of the “unpredictability” aspect to understand the user's hedonic and utilitarian motivation. The study also aims to understand how the systematic use of game elements and rewards can improve the user's attitude, which can translate into the continued use of the mobile application. The experiment study will also help mobile app developers understand the effect of stimuli to improve the app's usability for making payments. The study is performed for “mobile payment and digital wallet services mobile applications” and not for those mobile apps with a mobile payment as one of their features. It becomes crucial to understand how game elements can help these apps compete with others' offering better features. Lastly, the study contributes to the literature on mobile app design by measuring gamification's effect with different rewards (Sandberg and Alvesson, 2011; Alvesson and Sandberg, 2011). To the best of the authors' knowledge, the study is the first of its kind that explores the following research question and addresses it by using an experimental approach:

How do reward types interact with game design elements to understand the motivation (hedonic and utilitarian) and customer loyalty?

To address this research question, we propose a research framework using SOR's foundations and supporting it with self-determination theory and flow theory (Csikszentmihalyi, 2014; Admiraal et al., 2011). We then test the research framework using experimental data collected from users who make payments using mobile applications. The experiment was set up and run on respondents who have a history of making payments using mobile apps and follow the recency, frequency, and monetary (RFM) principle.

The remainder of the paper is arranged as follows. Section 2 presents a narrative review of the literature and briefly presents a discussion on each sub-section. Section 3 builds on the theoretical arguments and details the development of the research hypotheses. Section 4 illustrates the research design and focuses on the details regarding conducting an experimental study. The next section presents the results of the experiment and hypotheses. Section 6 discusses the results and examines each of the hypotheses, thereby linking them with the previous studies. This section also explains how the present study contributes to both theory and practice. Section 7 concludes the study and offers the future scope of the study and highlights the limitations of the present study.

2 Theoretical Underpinning and Review of Literature

2.1 Theoretical Debate

We propose a theoretical framework using a theoretical triangulation approach: Stimulus-Organism Response (SOR), social exchange theory (Emerson, 1976; Blau, 1964), and self-determination theory (Ryan and Deci, 2000). The study's underlying groundwork is drawn from the SOR framework that helps to understand gamification's effect on the customers' behavior. The framework posits the role of stimuli (S) to promote an individual's cognitive and/or affective reaction (O) that translates into the behavior of the end-user (R). SOR has been

used in the context of gamification, behavioral design, and consumer studies. We draw upon the concept of SOR to understand how game elements can be used to control user's behavior of a mobile app. The study also uses one game element to explain the customer's behavior towards the app's Loyalty (Cho et al., 2019; Gatautis et al., 2016).

The second and the third theoretical pivot on which our arguments are rested are social exchange theory and self-determination theory. Social Exchange Theory (SET) works on the cost benefit analysis principle that the customers evaluate before sticking to any brand for a longer duration (Harwood and Garry, 2015; Hsu and Chen, 2018). This helps explain the importance of rewards that can be useful for explaining the loyalty of the users towards any mobile application. In addition to this, rewards make the user motivated. Thus, just gamifying the mobile application would not suffice to be more interactive and does not make the user be hooked to it (Wee and Choong, 2019; Roungas et al., 2019). Instead, it is vital to understand how game elements and reward incentives of various types help to control the users' hedonic and utilitarian motivation. Earlier studies propose the relationship between motivation and loyalty, gamification and loyalty, and gamification and motivation (Islam et al., 2020; Koivisto and Hamari, 2014). The use of these theories is done to understand how users draw cost-benefit analysis from the product/service every time they are being bought and how they enhance their experience of the product/service when the entire purchase process is gamified. The design and use of rewards are often used to control the customer's attitude, which in turn helps them be more inclined towards being motivated towards either hedonic or utilitarian benefits (Jacoby, 2002; Mekler et al., 2013; Shankar and Jebarajakirthy, 2019). To the best of the authors' knowledge, the three theoretical perspectives' interplay has not been studied. This helps explain the phenomenon of customer loyalty and intentions to use a mobile app in the long run. We now present a detailed discussion of the operational definitions of gamification and customer loyalty.

Gamification is considered to be a game-changer for marketers as well as for customers. Unlike any other human-computer interactive technology that promises to engage the end-user, gamification has its application's width and depth. It helps firms improve upon their customer's experience after using a gamified version of their application. Firms' success stories can be seen mostly in all prominent sectors like health and fitness, retailing, branding, banking and finance, logistics, etc (Morford et al., 2014; Sailer et al., 2017; Triantoro et al., 2019). Gamification works on the user's psychological states and behavior that helps in getting improved results for the firms (Hinton et al., 2019).

Additionally, it builds a system that focuses on social and communicative persuasion and change in the attitude by affecting their motivations (Oinas-Kukkonen, 2013; Oinas-Kukkonen & Harjumaa, 2009; Hamari et al., 2014; Fogg, 2003). Most of the game elements used are designed following one or more game design principles that are inspired by the octalysis framework (Chou, 2014). The game design helps the users create a sense of belongingness with the product or service. Studies have confirmed that an intervention of game elements in the system design has improved the firm's interaction with their customer (Behl and Dutta, 2020; Behl et al., 2020). Studies also portray that loyalty benefits/rewards are also an ancient form of gamification. Building on Sharp and Sharp (1997) arguments, it would be logical to draw a parallel from loyalty programs into gamification. However, there are differences between them based on the type of rewards received in return. While most loyalty programs are designed to offer economic incentives that can be traded for a certain number of points earned

or several transactions made for a certain worth, it is essential to understand that such rewards evoke an extrinsic motivation (Deci et al., 1999). Gamification, on the other hand, works on the principle of driving the intrinsic motivation that helps the user take charge of their decisions and improve their ability to make better decisions. This is often done by targeting the affective self rather than the cognitive self of the user (Müller-Stewens et al., 2017). It is also studied that game design elements have also helped users make better decisions, which can also be explained using behavioural economics principles.

Various studies have attempted to define gamification; however, various contextual definitions hold for the respective studies that have defined them (Leclercq et al., 2017; Kim et al., 2020b). However, its generalizability is still questioned. However, the most common and highly cited definition refers to the “use of game elements in a non-game context.” The most common elements include points, badges, and leaderboards (often referred to as PBL). Palmer et al. (2012) discussed four aspects of gamification viz. social connection to boost group dynamics, feedback, and rewards such as obtained points and status, progress paths concerning rules and difficulty/complexity, and interface and user experience driven by aesthetics, integration, usability, and fun. There is a long history of the application of gamification in areas like crowdsourcing (Ipeirotis & Gabrilovich, 2014; Eickhoff, Harris, de Vries, & Srinivasan, 2012), marketing and advertising (Terlutter & Capella, 2013; Cechanowicz et al., 2013); environmental behavior (Lounis et al., 2014; Lee et al., 2013), public engagement (Tolmie et al., 2014), commerce (Hamari, 2013, 2015a); education (Simões et al., 2013; Hakulinen et al., 2013; Filsecker & Hickey, 2014; Bonde et al., 2014; Christy & Fox, 2014), health and fitness (Koivisto and Hamari, 2014; Hamari and Koivisto, 2015; Jones et al., 2014) and many more. Gamification studies have been dominated by theory-focused empirical studies that have mostly addressed the end user's behavioral aspects. Gamification has its linkages with many variables, and one such variable that is discussed is customer loyalty.

3 Hypotheses Development

Gamification and Loyalty have been studied together in many studies. The relationship between the two constructs is often explained using social exchange theory (Emerson, 1976; Blau, 1964). The theory explains subjective cost-benefit analysis that the user interprets while engaging with any brand for a longer time. The trade-off is often between how much time and resources a user invests and what the user gets in return apart from the product/service. Firms aim to give away tempting rewards, which qualifies for the hedonic quotient of the user largely. Kwak et al. (2018) also confirms that when the consumers perceive that the rewards are lucrative and give them either hedonic or utilitarian benefits from the rewards, their loyalty towards the brand becomes high. The study also hints the businesses carefully design their reward policy as it helps in cultivating loyalty towards the brand. Loughrey et al. (2018) also notes that if two or more firms intend to offer similar rewards, the firm that gives reward benefits aligned with the customers' psyche and offers rewards at much shorter intervals, is liable to gain higher loyalty compared to their competitors. Therefore, it is suggested that, if possible, the firms should give away rewards every time a customer shops something with the brand. For, e.g., Shopper Stop gives reward points to all its customers irrespective of their shopping. A similar example can also be seen by retail stores like Big Bazar and Carrefour that keep accumulating the points for their customers and shopping at their outlets (Agarwal and Malhotra, 2018; Kopalle et al., 2012).

Drawing upon SOR's principles, customer loyalty depends on the application and loyalty program's design. Recent studies confirm that reward types (self-oriented v/s altruistic) also impact the apps' loyalty. Rewards in their most contemporary form are designed without game elements (Hwang and Choi, 2020; Högberg et al., 2019). It is known that the presence of rewards increases the chances of the customer being more loyal. It is essential to explore if gamifying these rewards by one of the game elements like points, leader boards, badges, spin wheels, avatars, etc. would improve loyalty scores compared to the conventional form (Gallego-Durán et al., 2019; Zichermann and Linder, 2010). We can, therefore, hypothesize:

H1: Gamified mobile apps significantly impact consumer loyalty compared to the same mobile apps without gamifying it.

Gamification creates hedonic value, and the relationship can be explained better using flow theory (Csikszentmihalyi, 2014). Flow refers to- "A state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it." The concept of flow thus resonates into the phrase "enjoyable" which tallies with the idea of using game elements in a website which would eventually make the experience of the end-user more enjoyable (Deterding, 2012; Csikszentmihalyi, 2014). Additionally, following the ideas of Ryan and Deci (2000) that explain the linkages between intrinsic motivation and enjoyment, it is important to understand how gamified website helps users gain hedonic pleasure. Studies have confirmed that game elements trigger a sense of enjoyment experienced by the end-user and make them more involved with the gamified application (Blohm and Leimeister, 2013). Unlike shopping, where the motives can be hedonic (Hirschman and Holbrook, 1982), mobile payment and digital wallet service applications on smartphones behave differently. As these services work on the central idea of tap-to-pay purchases, it becomes challenging to plug game elements anywhere in a transaction process. However, firms like Google pay and Apple Pay have to use game elements to create a hedonic value for their users. Recent studies on similar platforms are mostly empirical; however, to the best of the authors' knowledge, there isn't any study that tests the relationship experimentally. We, therefore, propose:

H2: Hedonic motivation positively mediates the relationship between gamification and customer loyalty.

Literature related to technology use embarks the importance of perceived ease of use and perceived usefulness of a technology. Seminal work by Davis (1989) and Davis et al. (1992) has postulated a positive impact of perceived ease of use and perceived usefulness with users' intention to use the technology. This holds mostly for situations where such technology helps in drawing some utilitarian benefits out of it (Baptista and Oliveria, 2017). However, there seems to be a reverse trend when looked at the technology that draws hedonic benefits. Games motivate the users to be engaged with the system, and games mostly offer hedonic pleasure, which is often considered the most significant point that makes them hooked to the system (Faiola et al., 2013; Hamari et al., 2016). However, when the same game element is drawn from the setting of a game and applied to business, it has a positive impact on the utilitarian motivation by previous studies.

If game elements are perceived to be easy to understand and use in a non-game context, it can positively impact the user's attitude. Ease of use cognitively impact the user's mind, and their perception towards using a technology multiple times. Behavioral literature also confirms that

ease of use of any technology makes it useful for the end-user, which offers utilitarian benefits (Hassan et al., 2019; Koivisto and Hamari, 2014; Melancon et al., 2011). The same can also be referred to by Unified Theory of Acceptance and Use of Technology (UTUAT) theory and its extension. Gamification helps the firms earn profits by creating a medium that they can use to do business more frequently. In the present study, going by the same logical deduction, it is important to explore if there lies any mediating effect of utilitarian motivation that the mobile app (used for making payments) gives to its users. Also, following the inherent principles of self-determination theory, we propose to explore the following hypotheses:

H3: Utilitarian motivation positively mediates the relationship between gamification and customer loyalty.

3.1 The Moderating Effect of the Type of Rewards

As classified by previous literature (Hwang and Choi, 2020), the types of reward are divided into two types: self-oriented rewards and altruistic rewards. The mobile payment and digital wallet service applications on phones work on rewarding the end-user with a reward against a merchant or an individual's transaction. The rewards received might interact with the app's gamified version to affect utilitarian motivation, hedonic motivation, and customer loyalty. Revisiting the flow theory in this context, Csíkszentmihályi (1990) defined nine dimensions of flow as "(1) clear goals, (2) immediate feedback, (3) a match between personal skills and challenges, (4) merger of action and awareness, (5) concentration on the task, (6) sense of control, (7) loss of self-consciousness, (8) altered sense of time, and (9) the experience of becoming 'autotelic,' i.e., doing an activity for its own sake or its intrinsic reward" (Faiola et al., 2013; p. 1114).

The ninth point significantly stresses the derivation of autotelic experience drawn by the end-user after operating the app while results from "an activity or situation that produces its intrinsic motivation, rewards, or incentives, specifically without any outside goals or rewards" (p. 1114). Thus, it can be clearly understood that the gamified application would lead to higher customer loyalty when the rewards are received at an individual level rather than for others. The rewards are designed mostly, keeping in mind the psyche of the player (Hyken, 2017; Melenhorst et al., 2015). Gamification, in its octalysis form, gives rewards that motivate users to get themselves engaged better with the brand. These rewards elicit positive emotions and a positive attitude that makes the user loyal (Chiu et al., 2018; Danaher et al., 2020). Rewards have been studied in various forms, and the most common form of it is monetary and non-monetary rewards. Most of the firms stick to one type of reward as a matter of their loyalty program. However, recent studies have further confirmed that these rewards start losing value after a point in time as the user is aware of what he/she is likely to get. Very recently, some studies have tested the behavior of people when the rewards are layered with uncertainty (Suh and Wagner, 2017; Hsu et al., 2017). Moreover, such uncertainty would also help them get intrigued by the brand and use it more often, which eventually translates into loyalty.

Hofacker et al., (2016) discussed the difference between the game design elements like a spin wheel and scratch card and indicated that while spin wheels are useful game design elements for short term engagement. On the flip side, scratch cards have proved to have a long association with the brand. Bittner and Shipper (2014) ascertains that while cash rewards are mostly found to impact utilitarian motivation positively, non-monetary rewards positively impact hedonic motivation. However, both these types of rewards have shown a positive

impact on loyalty. The earlier studies have tested the relationships on an individual level and not in a gamified environment. It becomes interesting to revisit the relationship in the presence/absence of game elements in any mobile application. We therefore propose:

H4: There is a moderating effect of the type of rewards on the relationship between gamification and customer loyalty.

H5a: There is a moderating effect of the type of rewards on the relationship between gamification and hedonic motivation

H5b: There is a moderating effect of the type of rewards on the relationship between gamification and utilitarian motivation

Next, it is essential to discuss how customer loyalty towards the mobile application translates into its intention to use it for future transactions. Dide and Basu (1994) discusses that a loyal customer tends to use the same product or service when exposed to different situations and in the presence or absence of its competitors. Brand loyalty and behavioral intention have been tested correlated to each other on various accounts. It is well discussed in the marketing literature that a customer exposed to loyalty benefits is likely to use the same brand in the future (Evanschitzky et al., 2012). Therefore, various brands have launched their loyalty cards in various forms, which has helped them get customers to stick to their brand. It is also well-grounded in the literature that while studies have formally tested the relationship between loyalty and behavioural intention, it is important to understand if the same persists in mobile payment apps that are in inherent nature different from a product (Henderson et al., 2011). We therefore hypothesize:

H6: Customer Loyalty has a positive impact on the customer's continued intention to use a mobile payment app.

Based on the proposed hypotheses, we propose the research framework presented in Figure 1.

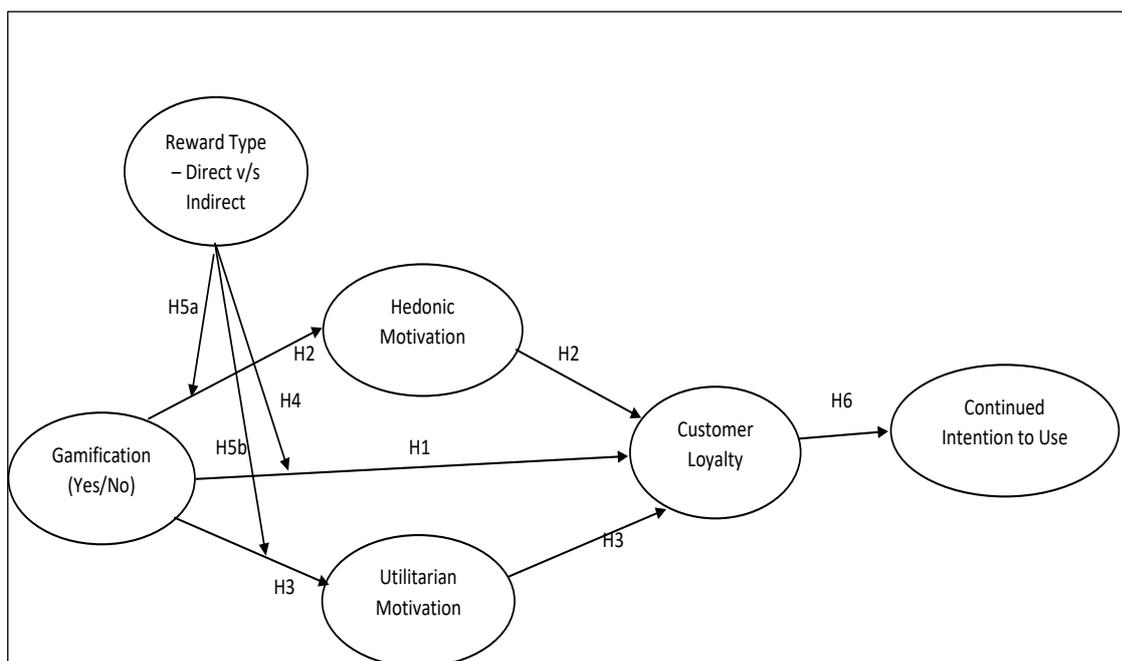


Figure 1. Conceptual Framework

4 4. Research Design

4.1 Stimuli Development

We developed stimuli based on previous studies that have used gamification in the context of mobile digital wallet platform and online payment system (E.g.: Google Pay and Paytm). We chose scratch cards as a form of gamification because most mobile digital wallet platforms and online payment system apps like Google Pay, Phone Pay, Paytm, WechatPay etc use similar mechanisms to reward the users. Additionally, creating such a game element and its execution does not require a high degree of skill and complexity. Moreover, the level of uncertainty is optimally taken care of while executing it. We mimic the style of rewards offered by digital wallet platform and online payment system platforms and therefore designed a 2 x 2 conditions with a mix and match of gamification (yes vs. no) and reward type (direct and indirect rewards). We created a dummy mobile payment application that resulted in one of the four activities when a user makes a payment to an individual or a merchant. To keep the rewards simple to understand and execute, we designed the rewards that look like the real rewards that these mobile apps give. The presence of gamification refers to a condition that the user will receive a scratch card, which has a reward. An absence of gamification refers to a situation when there is no scratch card earned by the user. The second level of attribution is the type of reward received by the user with or without the scratch card.

The rewards can be cash rewards, or a third party partnered rewards like coupons or discounts on purchases. The end-user can receive either of the two types of rewards irrespective of the scratch card, and the simultaneous working of both the situations leads to four situations. To make the experiment look real, the system's eligibility to generate a scratch card was when the user spends at least \$10 or more, and the cash rewards ranged from \$1 to \$5. Whereas in the case of third part partnered rewards, the monetary range of rewards remained the same; however, those could be achieved after purchasing a product or a service with the partnered brand. This exercise helped in creating an equivalence scenario across four stimuli.

Moreover, as our stimuli were built with a high resemblance with a popular mobile application, we developed two additional pages that had different names with similar content in it to nullify the confounding impact of respondents due to familiarity with the mobile app. The only change that these additional reward pages had was a difference in the app's name. In contrast, all other features in terms of their app design remain similar to the original stimuli. We performed the confounding effect of this as a pre-test before running the proposed model analysis.

4.2 Measurement

We used existing and established scales to measure all the variables. We adapted the existing scales in the study's context and used them in the pre-test to verify its reliability and validity. We took "hedonic motivation," which had two components: enjoyment and playfulness, as proposed by Hamari and Kovisto (2015). Under these two dimensions of hedonic motivation, we proposed to ask a total of 7 questions. These seven questions were adapted from van der Heijden (2004) and Webster and Martocchio (1992). The questions were central towards measuring user experience for attributes like curiosity, creativity, experimentative, enjoyable, exciting, engaging, and pleasant. The utilitarian motivation also comprises two dimensions: usefulness and ease of use. We borrowed items for these two sub-dimensions from Davis (1989), and a total of 8 questions were asked. The items measured attributes like clarity in

understanding, easy interface, ease in operating, ease in making payments, ease in receiving payments, ease in accessing rewards, ease in redeeming rewards, and accomplishing tasks. Loyalty to the app was measured using the items from Yi and Joen (2003), adapted to understand the loyalty to make payments from the same mobile app. We had four items to measure the construct that captured the user's mindset to choose a particular mobile app over its available competitors. Lastly, we used the scale from Venkatesh and Davis (2001) and Bhattacharjee (2011) to measure the mobile app's continued intention. The items in this construct helped us understand the respondent's behavior to use the mobile application to make payments to merchants, pay bills, and transfer money to friends/family both soon and in a prolonged time frame. Each item was measured on a 5-point Likert scale (1 denotes Strongly disagree and 5 denotes strongly agree). Some of the questions were asked in a reversed manner, and appropriate reverse coding was used to capture its actual meaning. We referred to the previous literature that supports the use of 5 points Likert Scale instead of 7-point scale in an experimental design.

4.3 Pre-Test

As proposed in the previous section, we performed a pre-test on gamification's designed manipulations and on the measurement items. The idea of doing this was to understand that there is no confounding effect drawn by designing an experiment that looks like a real situation. We reached out to students at a graduate business school and called for their expression of interest to participate voluntarily in our experiment. A total of 61 students agreed to be part of the pre-test study. We first explained the concept of a reward and its types to the participants and demonstrated them as a demo. The participants were randomly assigned to two of six categories: [2 gamification (present or absent) x 2 rewards (direct or indirect)] and [2 brands (brand A or brand B)] that are presented as loyalty programs implemented by the mobile app for making or receiving a payment. We found that participants were easily able to differentiate between a gamified v/s a non-gamified condition among the given scenarios and found that the gamified version of the app was found to be more playful ($\chi^2 = 38.191, p < .001$) and contributed more on the motivation when compared to a non-gamified version ($t = 5.99, p < 0.001$). The results further confirm that the internal consistencies of measurement items were satisfactory as Cronbach alpha was found to be greater than 0.70 for each construct. Additionally, results confirm that participants' familiarity with the brand name as no confounding effect for the two brand names (brand A and brand B) as there was no significant difference found between the two brands on the key constructs: hedonic motivation ($t = 0.77, p = 0.39$); utilitarian motivation ($t = 0.51, p = 0.88$) and Loyalty ($t = -0.14, p = 0.83$). The results helped us to fix onto four stimuli developed based on a given brand and pretested items. The results of the main study are discussed in the subsequent section.

4.4 Main study

We used a market research agency to select respondents to participate in our study. We received a total of 734 voluntary responses to be part of the study. We contacted them over email and checked their eligibility by asking some preliminary questions based on the familiarity and using mobile payment apps recently. Based on the first level of scrutiny, we found a total of 385 respondents who qualified for our study (see Table 1). The respondents were then briefed about the research, and each of the respondents was then assigned randomly to one of the four conditions. The respondents were exposed to a screen that asked them to make a payment from their dummy account to a merchant or an anonymously created

character (who can be treated as a friend). In both cases, the respondent had to spend a minimum of \$10 out of a total balance of \$20 added to their dummy account. Upon completing the transaction, the respondent received either a scratch card with some rewards or a pop-up message that displayed a reward. The reward could be either a cashback to their dummy account or a discount coupon that they can use for purchasing an associated brand. Whether received from a scratch card or without it, the cash reward ranged between zero and one dollar. The participant was informed about the deposit by a visual appeal (“Congratulations! You have won a cash prize”) that was created, showing that they have won a cash reward that was deposited in their dummy account.

Constructs	Measurement Items	Factor Loadings (PCA)	Factor Loadings (CFA)	Cronbach Alpha	Composite Reliability	Mean	Std. dev
Hedonic Motivation	HM1	0.81	0.79	0.87	0.86	4.03	1.03
	HM2	0.84	0.82	0.91			
	HM3	0.85	0.92	0.82			
	HM4	0.88	0.8	0.85			
	HM5	0.92	0.84	0.86			
	HM6	0.85	0.88	0.84			
	HM7	0.83	0.88	0.88			
Utilitarian Motivation	UM1	0.85	0.82	0.75	0.82	4.13	1.24
	UM2	0.93	0.82	0.82			
	UM3	0.92	0.85	0.85			
	UM4	0.91	0.86	0.79			
	UM5	0.94	0.92	0.83			
	UM6	0.82	0.84	0.84			
	UM7	0.81	0.86	0.87			
	UM8	0.85	0.84	0.81			
Customer Loyalty	CL 1	0.92	0.85	0.77	0.78	3.98	1.11
	CL 2	0.93	0.86	0.79			
	CL 3	0.89	0.88	0.81			
	CL 4	0.84	0.87	0.78			
Continued Intention to Use	CIU 1	0.89	0.82	0.8	0.81	4.04	1.31
	CIU2	0.91	0.87	0.81			
	CIU 3	0.9	0.89	0.78			
	CIU 4	0.91	0.93	0.81			

Table 1. Internal Consistencies Checks of the Measurement

Note: Results are presented for both the pre-test and the main measurement model. For the main study - ($\chi (191) = 213.87, p < .001, RMSEA = 0.07, NFI = 0.89, IFI = 0.88, TLI = 0.92, CFI = 0.94$). CFA © Confirmatory Factor Analysis; PCA © Principal Component Analysis

The respondents were also shown the account using a highlighter every time a transaction was done, and a reward was received. The same pattern was followed when the cash reward was not gamified. Similarly, in the case of the rewards that were not cash-based, the study designed rewards related to one of the four categories: entertainment, travel, food, and well-being. The rationale for deciding these categories is based on the trends that similar web applications offer to their customers. In the case of a scratch card that resulted in a reward like this, we displayed the reward column's reward along with its expiry date. While in the case where

there wasn't any scratch card used, the users were intimidated about the reward using a pop-up message ("Congratulations! You have won a prize"). In this case, the reward was also shown in the rewards section of the mobile application along with the date of expiry.

5 Data analysis and results

5.1 Manipulation checks

This section discusses the results of the manipulation checks. We used a five-point Likert Scale (5= "Strongly Agree" and 1 = "Strongly Disagree) for a statement: "This mobile application entails a game element such as a scratch card." We used the statement, "The reward received by using the mobile application is designed to offer a reward that can be redeemed with a partner brand" for testing the manipulation of the type of rewards received by the user for making a transaction. The respondents who experienced a gamified condition reported that the mobile application entails a game component (scratch card in this case) when compared to those who were not exposed to a gamified application (Mgamification = 4.81 vs. Mno_gamification = 2.11, $t(383) = 12.64, p < .001$). For the reward types, it was shown that there is a significant difference between the rewards received from cash prize when compared to discount coupons for a partnered brand (Mgamification = 4.39 vs. Mno_gamification = 2.87, $t(383) = 10.60, p < .001$). The results, therefore, confirm that the experiment populated successful manipulation. Next, we discuss the results of the measurement validation.

5.2 Measurement validation

We performed the test for reliability by calculating Cronbach's alpha's value and found that all the values are greater than 0.70. It is important to note that both the construct's composite reliability and the items' reliability were more than the threshold value (Robinson et al., 1991; Nunnally, 1978). We performed confirmatory factor analysis (CFA) using AMOS 21 and the results confirmed that there was an acceptable model fit with the data ($\chi(191) = 213.87, p < .001$, RMSEA (root mean square error of approximation) = 0.07, NFI (Normed Fit Index) = 0.89, IFI = 0.88, TLI = 0.92, CFI (Comparative Fit Index) = 0.94). The path coefficients were also found to have significant factor loadings that are greater than the threshold value (0.70). Following the guidelines of Fornell and Larcker (1981), we found out that the average variance extracted (AVE) of each construct is greater than 0.50 of the total variances. This confirmed that the data holds on convergent validity. We then calculated the inter construct correlation and found them to be significant ($p < 0.001$).

Variables	Hedonic Motivation	Utilitarian Motivation	Customer Loyalty	Continued Intention to Use
Hedonic Motivation	0.79			
Utilitarian Motivation	0.37	0.84		
Customer Loyalty	0.56	0.49	0.82	
Continued Intention to Use	0.61	0.46	0.51	0.89

Table 2. Results of Inter Item Correlation

Note: All the values of correlation coefficient are significant at 0.01 level (2 tailed)

Lastly, the results confirmed that the AVE is greater than the squared correlation coefficient, which supports that the data holds discriminant validity (Chin, 1998). The same can be

referred to in Table 2. Thus, we performed all the required checks and tests to validate that the data is consistent on convergent and discriminant validity and internal consistency.

5.3 Results of the Hypothesis Testing

We tested the five hypotheses (H1 - H5) by using the approach proposed in the previous section. The results from ANCOVA (Analysis of Covariance) ($F = 4.73$, $p = 0.01$) confirmed the effect of gamified customer loyalty programs. It is found that Customer Loyalty (CL) has significantly greater value for gamified programs when compared to conventional non-gamified programs ($M_{no_gamification} = 3.12$ v/s $M_{gamification} = 5.01$, $t=3.52$, $p =0.01$). We then tested for the mediation effect of utilitarian shopping motivation (H2) and hedonic shopping motivation (H3) using PROCESS Model 4 (Hayes, 2013). Results confirmed that gamification's total effect on customer loyalty is found to be significant ($\beta = 0.48$, $p =0.023$) (Adjusted $R^2 = 0.73$). However, we found that the direct effect was insignificant ($\beta = - 0.198$, $p = 0.35$) considering hedonic and utilitarian shopping motivation. Results also supported that utilitarian shopping motivation had a significant indirect effect on the impact of gamification on customer loyalty ($\beta = 0.39$, $p <0.05$), and a similar indirect effect is seen for hedonic motivation on customer loyalty ($\beta = 0.42$, $p <0.05$) (Hayes, 2013). Thus, both H2 and H3 are supported.

We applied ANCOVA to test the moderating relationship of types of rewards (direct v/s indirect) on the user's Loyalty to use the mobile app. Results confirmed that there is a non-significant effect of gamification x reward type. However, results confirmed that the main effect of gamification and reward type is found to be significant. Referring to the results from Figure 2, we found a significant difference between the customers' loyalty towards the mobile app between the cash and partnered rewards (non-cash discount coupons) in the case of the non-gamified version of the mobile application. On the flip side, we found a precisely opposite result in the gamification condition, which confirms that H4 is rejected.

Dependent Variable	Reward Type (Moderator)	Hedonic Motivation			Utilitarian Motivation		
		B	Standard Error	Index of moderated mediation	B	Standard Error	Index of moderated mediation
Customer Loyalty	Direct	0.48	0.131	b = -0.301	0.23	0.198	b = 0.213
	Indirect	0.33	0.103		0.41	0.203	

Table 3. Results for the moderating role of type of rewards on mediation of motivation

Note: The results are reported after performing a bootstrap analysis ($n=5000$; 95% bias corrected confidence interval) as proposed by Hayes (2013).

To test the moderated mediation analysis of hedonic motivation and utilitarian motivation (H5a and H5b), PROCESS macro (Model 7) was adopted by the type of reward. We found that the direct effect of the gamification is found to be non-significant with all mediators. Referring to the results from Table 3, the reward classification moderated the mediation effect of utilitarian motivation. Results confirmed that the mediating effect through utilitarian rewards between gamification and customer loyalty to use mobile apps is significantly high for direct (pure cash rewards) compared to that of indirect rewards (non-cash, third party partnered rewards). A similar analysis of the results to understand the mediating effect of hedonic motivation moderated by the type of rewards did not significantly differ when looking at the

analysis for different types of rewards. Thus, we can conclude that the type of rewards is not essential for understanding how game elements can induce hedonic motivation among mobile application users. We can therefore conclude that while H5a is supported, we tend to reject H5b. As the last part of the analysis to test the H6, we found a positive and significant impact of customer loyalty towards their intentions to use mobile apps in the future (Adjusted $R^2 = 0.73$; $\beta = 0.74$, $p < 0.01$). The results also aid our understanding of how a gamification experiment can help understand customer loyalty, which can then be translated into their intentions to use the mobile app again. Thus, design-based intervention can be used to improve customer engagement with the mobile application. The next section discusses the implications of the results and brings out a detailed discussion about how the results can contribute to theory and practice.

6 Discussion of Results

This section presents a detailed discussion of results obtained after experimenting and proposes theoretical and practical implications of the same. This will help extend the body of knowledge by advancing the theoretical debate in game design, customer loyalty, and behavioral studies.

Gamification has been the buzzword when it comes to engaging the customers by the companies. Game elements in their multiple forms and variations are used by firms to enhance repeat purchase behavior. In our study, we ground our work using an experimental study replying upon the SOR framework (Mehrabian and Russel, 1974). The study aims to understand how uncertainty as a core driver of gamification can be used along with direct/indirect rewards to understand the Loyalty and turn the user's behavior into a mobile payment application. We also build our arguments self-determination theory to dissect the user's motivation into utilitarian and hedonic motivation while making payments to merchants or friends/family. While previous studies (Seaborn and Fels, 2015; Kwak et al., 2018; Hwang and Choi, 2020) have attempted to link gamification with customer loyalty, we mediate the process by understanding how two types of motivations can be used as mediators to better explain customer loyalty, especially for a mobile application that can be used for only one reason (Shankar et al., 2020). We further tested how a gamified mobile application would resonate into better customer loyalty, which further translates into better chances to make payments using the same mobile application. Drawing upon the results from the 2×2 experiment, we confirm that gamified loyalty programs with a higher degree of uncertainty and offer a direct cash reward in return seem more effective than indirect benefits.

6.1 Theoretical Implications

The study is one of its kind to demonstrate the inter-relationship between gamification, type of rewards, motivation, and loyalty of the customer using a theoretical framework. The study designed an experiment to test how game element (scratch cards, in this case), which yields a cash reward for making a bill payment or transferring money using a mobile app, is more beneficial to measure the Loyalty of the customer. While earlier studies have explained this phenomenon using the mix of gamification with self-rewards and/or altruistic rewards in nature using SOR (Gatautis et al., 2016; Cho et al., 2019), this study offers a unique application of SOR's underlying concept by understanding the effect of motivation as a mediating variable to explain Loyalty. We based our study on the practically applicable scratch cards on mobile applications like Paytm, Apple Pay, Phone Pay, and Google Pay, which offer either a cash

reward or a discount coupon of an associated/partnered brand. The study brings to table a novel theoretical contribution of understanding the interrelationship of SOR with self-determination theory to explain customer loyalty (Islam et al., 2019; Ashaduzzaman et al., 2020).

Furthermore, we based our argument on the technology adoption model and its application in technology marketing to explain how a game element-based intervention in a mobile application can help develop a significant difference in improving customer's loyalty to use the same app for making future payments. While earlier studies have studied customer loyalty in the context of products/services that are mostly hedonic (Kwak et al., 2018; Melenhorst et al., 2015), we bring a new perspective towards understanding the role of rewards in contributing to the utilitarian perspective. Thus, for a business application like the one used in the study (mobile payment app), it is important to use theoretical arguments from motivation literature to understand customer loyalty.

This study uniquely discusses the mediating effect of motivation (hedonic and utilitarian) to explain the phenomenon of customer loyalty. Drawing from self-determination theory that explains a player's intrinsic and extrinsic motivation, we integrate the motivation of using an app with customer Loyalty under the act of it being gamified (Kivetz and Simonson, 2002). At the same time, earlier studies (Kelley and Thaibaut, 1978) have used SDT to discuss the linkage between gamification with an intrinsic and extrinsic motivation that often translates into the person's attitude, thereby resulting in increased engagement. We extend the known relationships by testing the moderated mediated effect of gamification and rewards using a motivation to capture customer's Loyalty. The study investigates the game design and the hidden rewards (with its different types) to understand a customer's future app usage behavior. The study offers a unique theoretical contribution to offer critical insights to explain how cash rewards to help offer a positive psychological impact on the app user's utilitarian motivation when given through a scratch card (a game element). The study additionally offers methodological support to explain questions related to "how" and "which" rewards matter for mobile apps dealing with money transfer.

Most of the earlier studies have used theory to explain the "how" part of gamification, while the "which" part of gamification is often missed (Loughrey et al., 2018; Nicholson, 2015; Putri et al., 2019). The use of experimental design for a mobile payment app is first of its kind to the best of the researcher's knowledge for measuring the Loyalty of the customer. The design of mobile apps with certain game elements and a specific set of rewards have gained pace recently. However, there isn't any clarity on which game elements and what type of rewards would add to the app's success and engage the customers better. Our study challenges the conventional methodology of using an empirical method of data collection. It often does not test the effect of the presence/absence of game elements and the type of rewards received by the user upon using the mobile app.

6.2 Practical Implications

The study offers various practical implications that can help engage the customers better by designing the mobile application differently. It will also help the mobile app to get customers with a higher degree of loyalty. Some of the study's critical implications point to lesser use of conventional and non-gamified mobile applications, contributing to lower loyalty towards the app. The study's findings support the argument that companies should use at least one game

element depending upon the nature of their business to develop the hook for their product/service. Further, to build loyalty towards the app, the game design should be used to support utilitarian benefits more critical than hedonic benefits, especially when the app has its business dealing with monetary transactions (Jebarajakirthy et al., 2020). Therefore, to enhance the customer's intention to use the app regularly, the app should focus on game elements that induce utilitarian benefits to its users.

Next, an important finding of the type of reward that should be used confirms that the users are more loyal to apps that offer monetary rewards than rewards linked to third party brands (Uncles et al., 2003). The rewards should be delivered using a gamified mobile application, and it is suggested that the rewards be designed using a degree of uncertainty. The degree of uncertainty keeps the customer hooked to the brand, and additionally, it positively impacts its behavior to use the app (Nunes and Dreze, 2006). Results also point out that while the third party partnered brands are important to improve upon hedonic motivation (Sharma et al., 2020). However, the users who use the mobile app to pay money to merchants or transfer money to their friends/family would be more loyal to the app when a cash reward is received in return because of its nature of being tangible. The post hoc analysis results confirmed that gamified apps with cash rewards are likely to be used more in the future, as expressed by the consumer's intentions compared with non-gamified rewards that are indirect. Such insights are important for game design viewpoint and for such mobile apps to partner with third party brands to measure customer engagement. The mobile apps must give optimum weight to cash in return as a reward instead of discount coupons to gain the loyalty of the customer.

7 Limitations and Future Scope of Research

The study inherits some limitations in selecting the respondents, designing the experiment, and deciding upon the scenarios that should be reported. First, the data was collected from respondents that had expressed their willingness to participate in the experiment. The sample size might comprise some respondents who did not understand the experiment and the objective behind it, leading to data reporting bias. Instead, the respondents should have been recruited carefully. Additionally, the success of any experiment lies in having a more extensive and diverse sample size. This issue could help in reducing the overall generalizability of the results. Next, the experiment's design has some assumptions that could add up the limitations of the study. First, instead of using reward types as direct and indirect, the operational definition of indirect rewards (which are third party awards) needs to be defined clearly. A very high possibility that the third party partnered rewards can positively or negatively contribute to an individual's hedonic or utilitarian motivation (Hamari, 2013). For example, a scratch card with some percentage discount on the flight ticket could be highly appreciated by a frequent flyer. However, for others, these rewards could be demotivating.

Similarly, a one-month membership of a popular health and fitness chain could be useful for someone who has access to that health and fitness center and is inclined towards a healthy lifestyle. Thus, designing the intangible and indirect rewards must be done, keeping in mind the respondents or vice versa. Second, the selection of scratch cards as a game element for our study could be replaced by other types of rewards with almost similar degrees of uncertainty. Gamification literature documents that game design has a significant impact on the behavior of the player. More importantly, the study lacks testing the placement of game design elements

in the experiment. The study creates a scenario that resembles very high with what the users face in their real life, which can lead to creating a bias in their responses.

However, a shorter time duration experimented with testing the effectiveness of game design on the user's behavior and their intentions to pay; it is important to repeat the experiment or record the respondents' behavior over a prolonged time duration. Future studies may be explored with different types of game elements to check, which has the highest effectiveness under similar situations. It is also important to quantify game interventions by linking it with actual use and reuse of the app in the future. It is interesting also to explore how users (often called players) of different types would respond to gamified apps' continuous use when similar features are embedded in competitive mobile applications. This, in turn, would help in actually measuring the loyalty of the user towards the mobile app. The experiment can also be tested for scenarios instead of a 2x2 setting to understand how users can use complex situations to make decisions regarding the use of mobile apps.

Lastly, future research may investigate how gamification and rewards can be used for other mobile applications and have other business models. It is crucial to understand the functioning and non-functioning of rewards for products and services to build a theoretical model that can be used by practitioners and academicians to understand the buying behavior of the consumers. Additional intervention in terms of app design and rewards can also be explored as moderators of the experiment.

References

- Admiraal, W., Huizenga, J., Akkerman, S., & Ten Dam, G. (2011). The concept of flow in collaborative game-based learning. *Computers in Human Behavior, 27*(3), 1185-1194.
- Agarwal, R., & Mehrotra, A. (2018). Understanding what matters to customers: The case of loyalty programs in the Indian context. *Journal of Relationship Marketing, 17*(4), 311-334.
- Alvesson, M., & Sandberg, J. (2011). Generating research questions through problematization. *Academy of Management Review, 36*(2), 247-271.
- Ashaduzzaman, M., Jebarajakirthy, C., Das, M., & Shankar, A. (2020). Acculturation and apparel store loyalty among immigrants in Western countries. *Journal of Marketing Management, 37*(5-6), 488-519.
- Baptista, G., & Oliveira, T. (2017). Why so serious? Gamification impact in the acceptance of mobile banking services. *Internet Research, 27*(1), 118-39.
- Behl, A., & Dutta, P. (2020). Engaging donors on crowdfunding platform in Disaster Relief Operations (DRO) using gamification: A Civic Voluntary Model (CVM) approach. *International Journal of Information Management, 54*, 102140. <https://doi.org/10.1016/j.ijinfomgt.2020.102140>.
- Behl, A., Dutta, P., Sheorey, P., & Singh, R. K. (2020). Examining the role of dialogic communication and trust in donation-based crowdfunding tasks using information quality perspective. *The TQM Journal*. <https://doi.org/10.1108/TQM-06-2020-0139>
- Bhattacharjee, A. (2001). Understanding information systems continuance: An expectation–confirmation model. *MIS Quarterly, 25*(3), 351–370.
- Bittner, J. V., & Shipper, J. (2014). Motivational effects and age differences of gamification in product advertising. *Journal of Consumer Marketing*.

- Blau, P. (2017). *Exchange and power in social life*. New York, USA: Routledge.
- Blohm, I., & Leimeister, J. M. (2013). Gamification. *Business & Information Systems Engineering*, 5(4), 275-278.
- Bonde, M. T., Makransky, G., Wandall, J., Larsen, M., Morsing, V., Jarmer, M., et al. (2014). Improving biotech education through gamified laboratory simulations. *Nature Biotechnology*, 32(7), 694–697.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295-336.
- Chiu, Y. L., Chen, L. J., Du, J., & Hsu, Y. T. (2018). Studying the relationship between the perceived value of online group-buying websites and customer loyalty: the moderating role of referral rewards. *Journal of Business & Industrial Marketing*, 33(5), 665-679. <https://doi.org/10.1108/JBIM-03-2017-0083>.
- Cho, W. C., Lee, K. Y., & Yang, S. B. (2019). What makes you feel attached to smartwatches? The stimulus–organism–response (S–O–R) perspectives. *Information Technology & People*. 32 No. 2, pp. 319-343. <https://doi.org/10.1108/ITP-05-2017-0152>.
- Christy, K. R., & Fox, J. (2014). Leaderboards in a virtual classroom: A test of stereo-type threat and social comparison explanations for women’s math performance. *Computers and Education*, 78, 66–77.
- Csikszentmihalyi, M. (2000). *Beyond boredom and anxiety*. San Francisco, CA, USA: Jossey-Bass.
- Csikszentmihalyi, M. (2014). Play and intrinsic rewards. In EDITORS MISSING *Flow and the foundations of positive psychology* (pp. 135-153). Dordrecht, The Netherlands: Springer.
- Csikszentmihalyi, M., & Csikzentmihaly, M. (1990). *Flow: The psychology of optimal experience* (Vol. 1990). New York: Harper & Row.
- Danaher, P. J., Sajtos, L., & Danaher, T. S. (2020). Tactical use of rewards to enhance loyalty program effectiveness. *International Journal of Research in Marketing*, 37(3), 505-520.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace 1. *Journal of Applied Social Psychology*, 22(14), 1111-1132.
- Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of research in personality*, 19(2), 109-134.
- Deterding, S. (2012). Gamification: designing for motivation. *Interactions*, 19(4), 14-17.
- Dide, A. S., & Basu, C. (1994). Customer Loyalty: Toward an integrated framework. *Journal of the Academy of Marketing Science*, 22(2), 99-105.
- Eickhoff, C., Harris, C. G., de Vries, A. P., & Srinivasan, P. (2012). Quality through flow and immersion: Gamifying crowdsourced relevance assessments. In *Proceedings of the 35th International ACM SIGIR Conference on Research and Development in Information Retrieval*, Portland, Oregon, USA, August 12–16, 2012, (pp. 871–88)

- Emerson, R. M. (1976). Social exchange theory. *Annual Review of Sociology*, 2(1), 335-362.
- Evanschitzky, H., Ramaseshan, B., Woisetschläger, D. M., Richelsen, V., Blut, M., & Backhaus, C. (2012). Consequences of customer loyalty to the loyalty program and to the company. *Journal of the Academy of Marketing Science*, 40(5), 625-638.
- Faiola, A., Newlon, C., Pfaff, M., & Smyslova, O. (2013). Correlating the effects of flow and telepresence in virtual worlds: Enhancing our understanding of user behavior in game-based learning. *Computers in Human Behavior*, 29(3), 1113-1121.
- Filsecker, M., & Hickey, D. T. (2014). A multilevel analysis of the effects of external rewards on elementary students' motivation, engagement and learning in an educational game. *Computers and Education*, 75, 136-148.
- Fogg, B. J. (2003). *Persuasive technology: Using computers to change what we think and do*. Boston, STATE MISSING, USA: Morgan Kaufmann Publishers.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Gallego-Durán, F. J., Villagrà-Arnedo, C. J., Satorre-Cuerda, R., Compañ-Rosique, P., Molina-Carmona, R., & Llorens-Largo, F. (2019). A Guide for game-design-based gamification. *Informatics*, 6(4), 49. <https://doi.org/10.3390/informatics6040049>.
- Gatautis, R., Vitkauskaite, E., Gadeikiene, A., & Piligrimiene, Z. (2016). Gamification as a mean of driving online consumer behaviour: SOR model perspective. *Engineering Economics*, 27(1), 90-97.
- Hakulinen, L., Auvinen, T., & Korhonen, A. (2013). Empirical study on the effect of achievement badges in TRAKLA2 online learning environment. In *Proceedings of Learning and Teaching in Computing and Engineering (LaTiCE) Conference Macau*, March 21-24, 2013, (pp. 47-54).
- 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*, 12(4), 236-245.
- Hamari, J., & Koivisto, J. (2014). Measuring flow in gamification: Dispositional flow scale-2. *Computers in Human Behavior*, 40, 133-143.
- Hamari, J., & Koivisto, J. (2015). Why do people use gamification services?. *International Journal of Information Management*, 35(4), 419-431.
- Hamari, J., Shernoff, D. J., Rowe, E., Coller, B., Asbell-Clarke, J., & Edwards, T. (2016). Challenging games help students learn: An empirical study on engagement, flow and immersion in game-based learning. *Computers in Human Behavior*, 54, 170-179.
- Harwood, T., & Garry, T. (2015). An investigation into gamification as a customer engagement experience environment. *Journal of Services Marketing*, 29(6/7), 533-546. <https://doi.org/10.1108/JSM-01-2015-0045>.

- Hassan, L., Dias, A., & Hamari, J. (2019). How motivational feedback increases user's benefits and continued use: A study on gamification, quantified-self and social networking. *International Journal of Information Management*, 46, 151-162.
- Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York, USA: Guilford Publications.
- Henderson, C. M., Beck, J. T., & Palmatier, R. W. (2011). Review of the theoretical underpinnings of loyalty programs. *Journal of Consumer Psychology*, 21(3), 256-276.
- Hinton, S., Wood, L. C., Singh, H., & Reiners, T. (2019). Enterprise gamification systems and employment legislation: a systematic literature review. *Australasian Journal of Information Systems*, 23, 1-24.
- Hofacker, C. F., De Ruyter, K., Lurie, N. H., Manchanda, P., & Donaldson, J. (2016). Gamification and mobile marketing effectiveness. *Journal of Interactive Marketing*, 34, 25-36.
- 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, 122-130.
- Hsu, C. L., & Chen, M. C. (2018). How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love. *Computers in Human Behavior*, 88, 121-133.
- Hsu, C. L., Chen, Y. C., Yang, T. N., & Lin, W. K. (2017). Do website features matter in an online gamification context? Focusing on the mediating roles of user experience and attitude. *Telematics and Informatics*, 34(4), 196-205.
- Huotari, K., & Hamari, J. (2017). A definition for gamification: anchoring gamification in the service marketing literature. *Electronic Markets*, 27(1), 21-31.
- Hwang, J., & Choi, L. (2020). Having fun while receiving rewards?: Exploration of gamification in loyalty programs for consumer loyalty. *Journal of Business Research*, 106, 365-376.
- Hyken, S. (2017). The best loyalty programs go beyond rewards. *Forbes*. Retrieved from <https://www.forbes.com/sites/shephyken/2017/03/25/the-best-loyalty-programs-go-beyond-rewards/# 268709882503>.
- Ipeirotis, P. G., & Gabrilovich, E. (2014). Quizz: targeted crowdsourcing with a billion (potential) users. In Proceedings of WWW '14 Seoul, Korea, April 7–11, (pp.143–154). New York, USA: ACM Publications.
- Islam, H., Jebarajakirthy, C., & Shankar, A. (2019). An experimental based investigation into the effects of website interactivity on customer behavior in on-line purchase context. *Journal of Strategic Marketing*, 29(2), 117-140.
- Islam, J. U., Shahid, S., Rasool, A., Rahman, Z., Khan, I., & Rather, R. A. (2020). Impact of website attributes on customer engagement in banking: a solicitation of stimulus-organism-response theory. *International Journal of Bank Marketing*. 38(6), 1279-1303. <https://doi.org/10.1108/IJBM-12-2019-0460>.

- Jacoby, J. (2002). Stimulus-organism-response reconsidered: an evolutionary step in modeling (consumer) behavior. *Journal of Consumer Psychology, 12*(1), 51-57.
- Jebarajakirthy, C., Yadav, R., & Shankar, A. (2020). Insights for luxury retailers to reach customers globally. *Marketing Intelligence & Planning, 38*(7), 797-811.
- Jones, B. A., Madden, G. J., & Wengreen, H. J. (2014). The FIT game: Preliminary evaluation of a gamification approach to increasing fruit and vegetable consumption in school. *Preventive Medicine, 68*, 76–79.
- Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: A theory of interdependence*. New York, USA: John Wiley & Sons.
- Kim, C., Costello, F. J., & Lee, K. C. (2020a). The Unobserved Heterogeneous Influence of Gamification and Novelty-Seeking Traits on Consumers' Repurchase Intention in the Omnichannel Retailing. *Frontiers in Psychology, 11*. doi-10.3389/fpsyg.2020.01664.
- Kim, M. J., Lee, C. K., & Jung, T. (2020b). Exploring consumer behavior in virtual reality tourism using an extended stimulus-organism-response model. *Journal of Travel Research, 59*(1), 69-89.
- Kivetz, R., & Simonson, I. (2002). Earning the right to indulge: Effort as a determinant of customer preferences toward frequency program rewards. *Journal of Marketing Research, 39*(2), 155-170.
- Koivisto, J., & Hamari, J. (2014). Demographic differences in perceived benefits from gamification. *Computers in Human Behavior, 35*, 179-188.
- Kopalle, P. K., Sun, Y., Neslin, S. A., Sun, B., & Swaminathan, V. (2012). The joint sales impact of frequency reward and customer tier components of loyalty programs. *Marketing Science, 31*(2), 216-235.
- Kwak, D. H., Ma, X., Polites, G., Srite, M., Hightower, R., & Haseman, W. (2018). Cross-Level Moderation of Team Cohesion in Individuals' Utilitarian and Hedonic Information Processing: Evidence in the Context of Team-Based Gamified Training. *Journal of the Association for Information Systems, 20*(2). Doi: 10.17705/1jais.00532.
- Leclercq, T., Poncin, I., & Hammedi, W. (2017). The engagement process during value co-creation: gamification in new product-development platforms. *International Journal of Electronic Commerce, 21*(4), 454-488.
- Loughrey, K., & Broin, D. (2018). Are We Having Fun Yet? Misapplying Motivation to Gamification. In 2018 IEEE Games, Entertainment, Media Conference (GEM), Galway, Ireland, August 15-17, (pp. 1-9).
- Lounis, S., Pramataris, K., & Theotokis, A. (2014). Gamification is all about fun: The role of incentive type and community collaboration. In Proceedings of ECIS 2014, Tel Aviv, Israel, June 9-11, 2014, (pp. 1–14).
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. Cambridge, MA, USA: The MIT Press.
- Mekler, E. D., Brühlmann, F., Opwis, K., & Tuch, A. N. (2013). Do points, levels and leaderboards harm intrinsic motivation? An empirical analysis of common gamification

- elements. In Proceedings of the First International Conference on gameful design, research, and applications, Toronto, Canada, October 2-4,2013, (pp. 66-73),
- Melancon, J. P., Noble, S. M., & Noble, C. H. (2011). Managing rewards to enhance relational worth. *Journal of the Academy of Marketing Science*, 39(3), 341-362.
- Melenhorst, M., Novak, J., Micheel, I., Larson, M., & Boeckle, M. (2015, October). Bridging the utilitarian-hedonic divide in crowdsourcing applications. In Proceedings of the Fourth International Workshop on Crowdsourcing for Multimedia, Brisbane, Australia, October 15, 2015, (pp. 9-14).
- Morford, Z. H., Witts, B. N., Killingsworth, K. J., & Alavosius, M. P. (2014). Gamification: the intersection between behavior analysis and game design technologies. *The Behavior Analyst*, 37(1), 25-40.
- Morschheuser, B., Hassan, L., Werder, K., & Hamari, J. (2018). How to design gamification? A method for engineering gamified software. *Information and Software Technology*, 95, 219-237.
- Müller-Stewens, J., Schlager, T., Häubl, G., & Herrmann, A. (2017). Gamified information presentation and consumer adoption of product innovations. *Journal of Marketing*, 81(2), 8-24.
- Nicholson, S. (2015). A recipe for meaningful gamification. In *Gamification in education and business* (pp. 1-20). Springer, Cham.
- Nunes, J. C., & Drèze, X. (2006). Your loyalty program is betraying you. *Harvard Business Review*, 84(4), 124.
- Nunnally, J. *Psychometric Methods*. 1978. New York, USA: McGraw Hill.
- Oinas-Kukkonen, H. (2013). A Foundation for the Study of Behavior Change Support Systems. *Personal and Ubiquitous Computing*, 17(6), 1223–1235.
- Oinas-Kukkonen, H., & Harjumaa, M. (2009). Persuasive systems design: Key issues, process model, and system features. *Communications of the Association for Information Systems*, 24(1), 485–500.
- Perryer, C., Celestine, N. A., Scott-Ladd, B., & Leighton, C. (2016). Enhancing workplace motivation through gamification: Transferrable lessons from pedagogy. *The International Journal of Management Education*, 14(3), 327-335.
- Putri, M. F., Hidayanto, A. N., Negara, E. S., Budi, N. F. A., Utari, P., & Abidin, Z. (2019). Gratification Sought in Gamification on Mobile Payment. In 2019 3rd International Conference on Informatics and Computational Sciences (ICICoS), Semarang, Indonesia, October 29-30, 2019 (pp. 1-6). IEEE. LOCATION AND DATE MISSING
- Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. *Measures of Personality and Social Psychological Attitudes*, 1(3), 1-16.
- Rodrigues, L. F., Oliveira, A., & Costa, C. J. (2016). Does ease-of-use contribute to the perception of enjoyment? A case of gamification in e-banking. *Computers in Human Behavior*, 61, 114-126.

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78.
- Ryan, R. M., Rigby, C. S., & Przybylski, A. (2006). The motivational pull of video games: A self-determination theory approach. *Motivation and Emotion*, 30(4), 344–360.
- Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, 69, 371–380.
- Sailer, M., Hense, J., Mandl, J., & Klevers, M. (2014). Psychological perspectives on motivation through gamification. *Interaction Design and Architecture Journal*, 19, 28–37.
- Sandberg, J., & Alvesson, M. (2011). Ways of constructing research questions: gap-spotting or problematization? *Organization*, 18(1), 23–44.
- Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of Human-Computer Studies*, 74, 14–31.
- Shankar, A., & Jebarajakirthy, C. (2019). The influence of e-banking service quality on customer loyalty. *International Journal of Bank Marketing*, 37(5), 1119–1142.
- Shankar, A., Jebarajakirthy, C., & Ashaduzzaman, M. (2020). How do electronic word of mouth practices contribute to mobile banking adoption?. *Journal of Retailing and Consumer Services*, 52, 101920. <https://doi.org/10.1016/j.jretconser.2019.101920>.
- Sharma, I., Jain, K., & Behl, A. (2020). Effect of service transgressions on distant third-party customers: The role of moral identity and moral judgment. *Journal of Business Research*, 121, 696–712. <https://doi.org/10.1016/j.jbusres.2020.02.005>.
- Sharp, B., & Sharp, A. (1997). Loyalty programs and their impact on repeat-purchase loyalty patterns. *International Journal of Research in Marketing*, 14(5), 473–486.
- Sigala, M., Toni, M., Renzi, M. F., Di Pietro, L., & Mugion, R. G. (2019). Gamification in Airbnb: Benefits and Risks. *e-Review of Tourism Research*, 16(2/3), 24–32.
- Simões, J., Díaz Redondo, R., & Fernández Vilas, A. (2013). A social gamification framework for a K-6 learning platform. *Computers in Human Behavior*, 29(2), 345–353.
- Suh, A., & Wagner, C. (2017). How gamification of an enterprise collaboration system increases knowledge contribution: an affordance approach. *Journal of Knowledge Management*, 21(2), 416–431.
- Terlutter, R., & Capella, M. L. (2013). The gamification of advertising: Analysis and research directions of in-game advertising, advergames, and advertising in social network games. *Journal of Advertising*, 42(2-3), 95–112.
- Tolmie, P., Chamberlain, A., & Benford, S. (2014). Designing for reportability: Sustain-able gamification, public engagement, and promoting environmental debate. *Personal and Ubiquitous Computing*, 18(7), 1763–1774.
- Triantoro, T., Gopal, R., Benbunan-Fich, R., & Lang, G. (2019). Would you like to play? A comparison of a gamified survey with a traditional online survey method. *International Journal of Information Management*, 49, 242–252.

- Uncles, M. D., Dowling, G. R., & Hammond, K. (2003). Customer loyalty and customer loyalty programs. *Journal of Consumer Marketing*, 20(4), pp. 294-316.
- van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, 28(4), 695-704.
- Venkatesh, V. (1999). Creating favorable user perceptions: Exploring the role of intrinsic motivation. *MIS Quarterly*, 23(2), 239-260.
- Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. *Information Systems Research*, 11(4), 342-365.
- Webster, J., & Martocchio, J. J. (1992). Microcomputer playfulness: Development of a measure with workplace implications. *MIS Quarterly*, 16(2), 201-226.
- Wee, S. C., & Choong, W. W. (2019). Gamification: Predicting the effectiveness of variety game design elements to intrinsically motivate users' energy conservation behaviour. *Journal of Environmental Management*, 233, 97-106.
- Yang, Y., Asaad, Y., & Dwivedi, Y. (2017). Examining the impact of gamification on intention of engagement and brand attitude in the marketing context. *Computers in Human Behavior*, 73, 459-469.
- Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game mechanics in web and mobile apps*. Sebastopol, CA, USA: O'Reilly Media, Inc.
- Zichermann, G., & Linder, J. (2010). *Game-based marketing: inspire customer loyalty through rewards, challenges, and contests*. New York, USA: John Wiley & Sons.

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