

---

## Evaluating the effect of psychological dimensions of gamification strategy on creation of unplanned purchases

---

Seyed Fathollah Amiri Aghdaie\*

Department of Management,  
University of Isfahan,  
Isfahan, Iran  
Email: s.aghdaie@ase.ui.ac.ir  
\*Corresponding author

Hamidreza Talaei

Faculty of Management,  
Department of Management,  
University of Tehran,  
Tehran, Iran  
Email: hamidreza.talaie@gmail.com

Paria Soltanpour

Quality Management Research Group,  
Department of Management,  
University of Isfahan,  
Isfahan, Iran  
Email: Paria.soltanpour@gmail.com

**Abstract:** To use and how to use varied gamification tools is very important from a salesperson perspective. If they use them in a technical way, it may lead to unplanned buying. In this paper data was gathered from 360 customers in Dillard's chain stores in Houston by handing out questionnaires. This study first introduces the concept of gamification strategy and unplanned purchases, and then identifies some salesperson's gamification tools based on psychological dimensions which can lead to change in purchase intention or unplanned purchases and consequently trade growth. In this way scholars developed a structural model which is going to illustrate the effect of these psychological dimensions on unintended buying. Results showed that these strategies are effective in marketing.

**Keywords:** gamification strategy; psychological dimension; unplanned purchases.

**Reference** to this paper should be made as follows: Amiri Aghdaie, S.F., Talaei, H. and Soltanpour, P. (2022) 'Evaluating the effect of psychological dimensions of gamification strategy on creation of unplanned purchases', *Int. J. Procurement Management*, Vol. 15, No. 1, pp.20–39.

**Biographical notes:** Seyed Fathollah Amiri Aghdaie holds a PhD in Business Management, Marketing Trends. He graduated from University of Manuel Luiz Quezon, Manila, Philippines. Since 1993, he is working as a faculty member of Department of Management, Faculty of Administrative Sciences and Economy, University of Isfahan, Isfahan, Iran. His interested fields are marketing management, consumer behaviour and tourism.

Hamidreza Talaei is a PhD student in Industrial Management and presently studying at University of Tehran in Tehran, Iran. His interested fields are innovation management, customer satisfaction and loyalty, marketing management and consumer behaviour.

Paria Soltanpour holds a Master in Business Management Marketing Trends. Her interested field are business management, advertising and consumer behaviour.

---

## 1 Introduction

A chain stores' success depends on more sales among competitors. Sellers often use many different tools and strategies in this way. Due to the fact that these tools and policies can sometimes lead to unplanned purchases, they have received considerable attention from the researchers. In business activities vendors usually use these strategies to motivate their customers about purchase decision (Deterding et al, 2011; Hamari and Koivisto, 2015; Nicholson, 2012; Stock et al., 2015). In these situations managers create efficiency and desired behaviour change by harnessing utilitarian prize and reward mechanics of gamification (Zichermann and Linder, 2013). Considering that most people often enjoy competing and finally winning, in this process, they can compete beside watching other people and having fun and getting profit. Even with small, symbolic or virtual prizes, they usually relish in participating in these games. Taking advantages of the game characteristics, nowadays this subject has been used in the field of marketing (Yang et al., 2017). On the other hand, Impulse purchases are often unplanned and are a result which is caused by conflicting between desire (short term temptations) and willpower (long term goals) (Baumeister, 2002; Beatty and Ferrell, 1998; Hoch and Loewenstein, 1991; Yi and Baumgartner, 2011). In the modern and civilized world of today, the effect of advertisements on taste and preference of products is apparent to everyone; so that companies and factories make all their efforts to promote their products and services (Amiri Aghdaie and Mahboubi Renani, 2017). The growth of technology in the chain stores has led to the production of new products and the shift in service delivery and also, On the other hand, vendors in today's competitive trading spaces usually struggle to sell their products in a professional way to be distinct in the competitive environment among the other competitors. Based on competition for cost savings from a customers' perspective, customer retention, customer incentives and customer acceptance, security, professional vendors uses such tools to sale products and present services so that it may leads to a change in the mindset of customers (Chang, 2007). Many practitioners have studied in this regard. The main objective of our study is

assessing the influence of psychological dimensions of these strategies on unplanned buying behaviour. This study begins with describing the concept of unplanned purchases and gamification strategies. In the following, a review of past literature has been done. After doing the research methodology, Results and limitations are discussed subsequently.

### *1.1 Unplanned buying and trade growth*

In all circumstances, even when people purchase their required products impulsively, they will seek good reasons for their purchase decision as a rational consumer (Ling and Yazdanifard, 2015). In fact, vendors can instantly change the mindset of the buyer by employing specific strategies in creating the environment during the sale, leading to an increase in sales of their goods. In other word, professional vendors use these strategies as a tool to reduce consumer risk and increase consumer demand (Janakiraman et al., 2015). Visual signals are primarily processed by consumers; hence they are important in drawing attention and in subsequent product categorisation (Amiri Aghdaie and Mahboubi Renani, 2017). Furthermore, visual signals are processed quickly and automatically (Talukdar and Lindsey, 2013). Considering the importance of the customer in the competitive world of today, and given that the research has been carried out, vendors are able to change the intentions of customers and make sudden purchases by applying attractive and rational methods.

### *1.2 The impact of gamification strategy on unplanned buying behaviour*

Today, stores are trying to reengineer their processes on a client basis, and using IT to gain customers, connect with them, differentiate services, and provide new opportunities (Amiri Aghdaie et al., 2017). These stores can communicate with consumers and provide unique services to each one. In this way gamification links game studies to marketing management and bridges two perspectives: game designers' and users' perspectives (Poncin et al, 2017). Gamification refers to the design approach that attempts to bring about similar positive experiences as those seen in games, and consequently affect user behaviour and cognitive processes (Hamari, 2019; Huotari and Hamari, 2017). These practices help to change customer intention and behaviours which consequently induce some benefits for the company and business activities (Werbach and Hunter, 2012; Zichermann and Linder, 2013). There are generally two types of motivation which are used by salespersons: intrinsic and extrinsic. In extrinsic motivation they do something for its external rewards, like money, praise or other tangibles. But in the intrinsic motivation, internal achievement and perception like customers' satisfaction or other positive feelings is important (Denny, 2014). In intrinsic motivation, genuine desire for the purchase is created in them and they enjoy it extraordinarily (Yang et al., 2017). In addition to the stores, many companies have used gamification in the marketing area for branding, including earning points, badges and free products by using these tools and joining competitive activities. In return, companies attempt to engage users, encouraging them to join a community and participation, sharing with friends outside the community and even recruiting friends to join the community (Meloni and Gruener, 2012). Likewise

by creating instant purchases marketers join to sustainable competitive advantage. 'Gamification' is a newfound technology that uses game design elements to motivate individuals to behave differently in non-gaming background. For this purpose, game designers provide scores, badges, discounts and other services, which give some achievements and benefits to customers (Bittner and Shipper, 2014). Users of these intelligently tools can be stakeholders of organisation, consumers of products and services, individuals or even groups in competition (Singh, 2013). Gamification is an innovative tool that helps to grow the business by changing the mindset of customers in terms of buying or not buying a particular product. The purpose of this study is to assess the effect of the gamification psychological aspects on the unplanned purchases. Due to the complexity and development of them, these types of purchases have attracted much attention from the past to the present among researchers. But so far, the impact of gamification of salespersons on these dimensions in the chain stores has not been discussed. Also some studies have been conducted on unplanned purchases while as a main objective of our study; we specially attempt to identify characteristics of these strategies in Dillard's, one of the chain stores in Houston.

## **2 Theoretical background and hypothesis development**

### *2.1 Gamification strategy*

Review of literature demonstrate that gamification, a term was first introduced by Nick Pelling in 2002, provide different behavioural and attitudinal benefits in a business field (Hamari and Koivisto, 2015; Werbach and Hunter, 2012; Zichermann and Linder, 2010, 2013). Then in 2010, integrating the social issues and reward system, the game progressed in software design considerations (Zichermann and Cunningham, 2011). In the literature, definitions of gamification commonly focus on either the experiential aspect (the gameful experience such as the pursuit of satisfying the intrinsic need (Högberg et al., 2019) or the game design such as what elements of design can be used in gamification (Deterding et al., 2011). Because of special attention to the gamification design distinct software with video game features improved rapidly. Scholars studied gamification as a part of extended range of academic traditions assembling distinct and supplemental perspectives on design and application (Deterding, 2012; Hamari, 2015; Hamari and Koivisto, 2015; Stock et al., 2015). Main subjects about gamification in the context of business include design principles (Blohm and Leimeister, 2013; Conaway and Garay, 2014; Robson et al., 2015), emotional mechanisms (Bittner and Shipper, 2014; Hamari and Koivisto, 2015), social connections (Conaway and Garay, 2014; Mainemelis, 2001; Moncrief et al, 2015; Quinn, 2005), changes in consumer behaviour (Bittner and Shipper, 2014; Insley and Nunan, 2014), innovations (Raasch and von Hippel, 2013; Stock et al., 2015) and political communications (Mayer, 2009). Researches have shown that experiences designed by gamification may lead to persuasive benefits (Bittner and Shipper, 2014), profitable changes and improvement in consumer behaviour (Conaway and Garay, 2014; Seaborn and Fels, 2015). Using game design elements in a non-gaming background is include of some of game design elements, but is not the design of a

complete game (Deterding et al., 2011). Gamification helps to stimulate motivation, interaction, brand awareness and loyalty (Witt et al., 2011). According to Conaway and Garay (2014) gamification typically procure monetary issues with instant success, instant extrinsic rewards with financial compensation (Moncrief et al., 2015) and non-monetary incentives including power, responsibility and leadership in higher levels (Conaway and Garay, 2014; Palmer et al, 2012). Previous studies indicates that positive impacts on players' attitudes (Domínguez et al., 2013), experience (Robson et al., 2014), enjoyment and engagement in gamified activities (Witt et al., 2011; Harwood and Garry, 2015) are some of the results of gamification tools which are used in business context. Varied definitions of gamification were presented by researchers: Deterding et al. (2011) defined gamification as 'Using game design tools and elements in non-gaming situations'. Concentrating on behavioural psychology and social games by Zichermann and Cunningham (2011) they introduce gamification as Process of game-base thought and game mechanisms which used for solving problems by involving users. From a Conjeo (2014) point of view, gamification is a kind of technology that motivates people to develop a particular attitude in non-game environments. Researches about gamification is currently being conducted in different communities by scholars (Caulfield et al, 2011; Harman et al, 2014; Pedreira et al, 2015a, 2015b). In shopping centers such as chain stores, vendors create entertaining interaction with their customers in daily routines to gain a profit (Singh, 2013). Because of enhancement and popularity of gamification tools in marketing activities and its aim to the trade growth in recent years, marketers attempts to embed them in their politics in a technical way. According to a survey in 2013, more than 70% of Forbes Global 2000 companies declare that they had plans customer retention purposes and loyalty (Park and Bae, 2014). Anyway gamification elements can be utilised beside various methods to create any type of games in different circumstances. The gamification components include three main categories: dynamics, mechanics, and components (Werbach and Hunter, 2012):

### *2.1.1 Dynamics*

Dynamics which are basis of the game include pressures, emotions, tradition, achievements and relationships. They are the most implicit parts that typically demonstrate common disposition (Amiri Aghdaie et al., 2017).

### *2.1.2 Mechanisms*

Mechanisms are some motivations are more important after dynamics. In Werbach's theory, this mechanism includes: challenges, opportunity, competition, collaboration, feedback, resources, rewards, deals, turns and victory conditions and they encourage users toward desired activities.

### *2.1.3 Components*

According to Werbach's theory, these components are including: avatars, collections, combat, unlocking a game content, giving awards, standings, procedures, benefits, mission, social graph, teams and virtual goods which facilitate this process as sensible or semi-sensible elements (Amiri Aghdaie et al., 2017).

## 2.2 *Unplanned purchases*

On the other hands, scholars and practitioners has been focused on the topic of unplanned purchases or impulse buying for a particular product (Hostler et al., 2011). Each product is composed of three levels:

- 1 the foundation or basis of the product including the main profit of the product for consumer
- 2 the real product including quality level, characteristics, design, brand and packaging
- 3 extra advantages which are granted to the customer with the product (Amiri Aghdaie and Mahboubi Renani, 2017).

Recent studies show many reasons such as packaging as physical appearances of products which form the second level of product at this classification, also affect catching attention of the customer to a product at store, trying and eventually purchasing it (Amiri Aghdaie and Mahboubi Renani, 2017).

Every business must inform its customers about the goods and services that it has to offer, with the aim of ensuring that they can benefit from them to create space for both small and large businesses to engage with their customers (Nuseir, 2020).

Advertising with providing information and allowing the creation of need and it helps to attract the customer's attention (Gummeson et al., 2014; Nuseir, 2020). Also according to the Mayer (2009) factors such as individualism, age, and income were related to unplanned purchases. Accordingly, making decision about these items is a part of product programming in manufacturing institutes which must be investigated (Amiri Aghdaie and Mahboubi Renani, 2017). Based on initial studies, unplanned purchases are emotional response in particular situations (Talukdar and Lindsey, 2013; Verplanken and Sato, 2011).

Choomovilailuk and Butcher (2014) addressed unplanned buying behaviour as a social effect aspect. Decision of customer about buying or not buying a product may be affected by social effect in terms of buying or not-buying from shelf-exposure (Choomovilailuk and Butcher, 2014). Moreover, Bell et al. (2011) reviewed related background from the present to 1960s' and found several factors which usually has influence in creation of unplanned buying behaviour, such as in-store marketing in order to animate forgotten product items, individual difference in terms of unplanned buying manners, customer characteristics, and sales promotion marketing programs. Professional sellers can use these strategies as the gamification tools to effects on consumer's decision in a moment and change their attitude toward products and thus helping to trade growth.

In order to conduct the present research methodology, a combination of dimensions which has the most application in different technology acceptance models, is being considered. These dimensions are mentioned as following.

### 2.2.1 *Perceived performance (perceived usefulness)*

Perceived usefulness (PU) is about how much a person believes that employing a particular system could effect on his or her job usefulness: There are 5 indicators for the purpose of measuring perceived performance: being fast (or quick), time saving, effort saving, cost reducing, and overall usefulness (Renny et al., 2013). Researchers addressed this as perceptions of performance expectancy. In this study, based on this dimension,

perceived performance is the extent to which one thinks that the tools of gamification have led him to unplanned buying because of this usefulness. This article examines the impact of this usefulness on unplanned purchases while purchasing. Given the above, we can state the following hypothesis:

H1 There is a positive relationship between considering Perceived performance (perceived usefulness) during sales and unplanned buying.

### *2.2.2 Perceived ease*

Perceived ease of use (PEU) means the level of every person's belief about a particular system that how much it is free of effort (Saade and Bahli, 2005). According to the previous studies in this field, PU mediates the efficacy of PEU on usage (Karahanna and Straub, 1999). For instance PEOU and the intention to use smartphone apps have a positive relationship (Okumus and Bilgihan, 2014). But in this research based on this dimension, perceived ease is the extent to which one thinks that the tools of gamification are easy to comprehend or use and this article seeks to examine the extent to which this ease affects unplanned purchases. Based on the above-mentioned content, we can have the following hypothesis:

H2 There is a positive relationship between considering Perceived ease during sales and unplanned buying.

### *2.2.3 Attitudes toward use*

While external elements include of demographic, economic, social, situational and technological could impress consumer behaviour, the internal factors such as beliefs and attitude, learning and motives and needs, personality, perception and values could be so effective (Wu, 2003). Also the lifestyle as persons' patterns of living, by measuring the activities, opinions, interest, is something between the external and internal agents. All of these influence on consumers attitude and purchase decision (Wu, 2003). It is important to know what the customers' attitude is and how the marketers' policies affect their cognition, emotion and action as an attitude (Lou et al, 2017). Lou et al (2017) declare that important attitudes and behaviour positively correlate with each other. The more positive the attitude toward a product, the higher the buying intentions will be (Chiu and Leng, 2016). Likewise, the question here is whether creating this positive attitude is effective on unplanned purchases through utilising this strategy of gamification. Considering the above paragraph, we can make the third hypothesis in this way:

H3 There is a positive relationship between considering Attitudes toward use during sales and unplanned buying. Social impact (subjective norm).

According to researchers' findings behavioural intention of a customer about doing an action is a result of the subjective norm. The behaviour of individuals in different situations is not entirely under their control, their attitudes and subjective norm can intervene in their decision-making process (Hasbullah et al., 2016). Based on Ajzen and Driver (1980) define, the social impact is what is imposed through neighbour, friends and

peers' favours about what is right or wrong to do in community from their important person's perspective. In other words perceived pressure and person's perception forms the subjective norms (Hasbullah et al., 2016). In other words, social impact refers to the impact of other people on customers about buying goods, which its effect on unplanned purchases is examined in this article. With regard to the aforementioned contents of the subjective norms, the following hypothesis can be formed like this:

H4 There is a positive relationship between considering social impact (subjective norm) during sales and unplanned buying.

#### *2.2.4 Willingness to use (behavioural intention)*

In the literature, scholars have commonly been studied behavioural intentions in the frame of positive word of mouth (WOM) or re-visiting intention (Bujisic et al., 2014; Ha and Jang, 2010; Han et al., 2009; Jin et al., 2015; Küçükergin and Dedeoğlu, 2014). Recommendation, patronage intentions, and purchase probability formed Behavioural intentions (Ladhari et al., 2017). According to Jang and Namkung (2009) atmospherics of full-service restaurant and other professional aspects like this can in turn predict positive emotions, which consequently impact patrons' behavioural intentions. For instance, Chan et al. (2015) find that using luxury branded products which stimulates emotional responses may lead to repurchase the brand in the future. On the other hand attitudinal loyalty refers to the customer's level of commitment toward a product, service, brand or business (Chaudhuri and Holbrook, 2001). Therefore, behavioural intention means attitudinal aspect of loyalty (Oliver, 2010). This article raises the question that whether creating this Willingness in customer's minds is effective on their unplanned purchases through utilising this strategy of gamification. Considering the above mentioned, we can make the last hypothesis in this way:

H5 There is a positive relationship between considering Willingness to use (behavioural intention) during sales and unplanned buying.

### **3 Methodology**

#### *3.1 Sample*

In this research, theoretical foundations were first developed by reviewing library resources and related articles in this field. Then the proposed model was considered as the research model. In order to collecting data, a questionnaire consists of 30 questions was used with multiple questions. The statistical population includes unlimited number of US citizens who visit the Dillard's chain store in Houston, Texas. According to Morgan's table, 384 people were selected as samples. 380 questionnaires were distributed to prevent dropping out of non-returns of the questionnaires. Of these, 365 questionnaires were referred. Finally, 360 questionnaires were considered as the basis of the research.



## 3.2 Measures

### 3.2.1 Perceived performance (perceived usefulness)

This construct was measured on a 5-point Likert scale using six items. It is the degree of every person's perception about level of performance of a system (Saade and Bahli, 2005). To measure this item, we used questions such as: The prizes or awards set at the Dillard's store are valued for customers. Reliability coefficients for perceived performance were ( $\alpha = 0.727$ ).

### 3.2.2 Perceived ease

This seven-item construct was measured using a 5-point Likert scale that measures how much it is easy to cognize or utilize (Jen and Hung, 2010) with items such as It was easy for me to learn how to play that game and compete with another person ( $\alpha = 0.741$ ).

### 3.3.3 Attitudes toward use

We measured this dimension on a 5-point Likert scale including questions such as 'Shopping from the Dillard's shop is beneficial' and 'Buying from the Dillard's store is exciting for me'. The reliability coefficients were  $\alpha = 0.923$ .

### 3.2.4 Social impact (subjective norms)

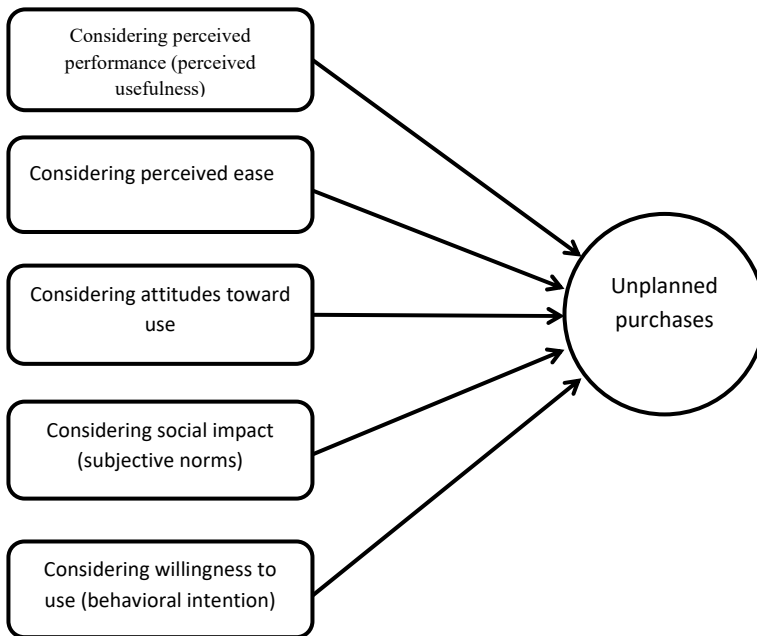
We used this item to measure how much that behavioural intentions of consumers can originate from friends, family and peer groups' interests (Pavlou and Chai, 2002). In this way, we designed questions such as: I am familiar with these strategies during sales which are used in Dillard ( $\alpha = 0.766$ ).

### 3.2.5 Willingness to use (behavioural intention)

At the end, this item was used to measure how much professional aspects could predict behavioural intentions. In our questionnaire we had used questions such as: By looking at the products of the Dillard store, I have also found a tendency to buy unplanned products in addition to the products I have planned to purchase in this field ( $\alpha = 0.786$ ).

In the previous studies (Hamari, 2019; Huotari and Hamari, 2017; Janakiraman et al., 2015; Ling and Yazdanifard, 2015) the variables of gamification and unplanned purchases have been investigated separately. However in none of the aforementioned studies, there exist assessing the impact of psychological dimension of gamification on unplanned purchases. By conducting this research, therefore, this study has adopted a distinct attitude to these variables. Figure 1 illustrates the conceptual model of the various hypotheses investigated in this research.

**Figure 1** Conceptual framework of the influence of psychological dimensions of gamification on unplanned purchases



## 4 Results and discussion

### 4.1 Results

We first performed exploratory factor analyses of the items for gamification strategy. To examine the research hypotheses, we performed structural equation modelling (SEM) to confirm the fit of indices of hypothesised model. One of the statistical methods which take a confirmatory approach to structural theories related to phenomena is SEM. This modelling can statistically determine its degree of consistency with the data. If fitness is adequate, this model is a reason for accepting the assumed relationships between the variables; if the fitness is inadequate, these relationships cannot be defended. SEM adopts a confirmatory approach to data analysis. We used AMOS 24 Software to test all model estimations. In the structural equations, first the fitting of the model must be considered. In the fit of the model, this question is answered, ‘How much these data support the model?’ To answer this question, general indicators have been used. Based on the adoption of such a method, five measurement patterns that relate to the variables are first tested separately. The general indexes of pattern matching for measurement patterns (confirmatory factor analysis) are presented in Table 1.

**Table 1** General indices of measurement patterns fitting

<i>Indices</i>	<i>Perceived usefulness</i>	<i>Perceived ease</i>	<i>Attitude toward use</i>	<i>Social norm</i>	<i>Willingness to use</i>
CMIN/DF	1/177	1/373	2/464	1/208	1/521
PCFI	0/764	0/621	0/925	0/793	0/672
GFI	0/974	0/924	0/974	0/917	0/785
RMR	0/04	0/05	0/02	0/02	0/04
CFI	780/0	0/938	0/932	0/926	0/937
RMSEA	0/074	0/069	0/091	0/095	0/087

After verifying and confirming the patterns of measurement in the first step, in the second step, structural equations are used to test the hypotheses.

The fit indices of the model showed that  $DF = 3.703$ , along with 33.614 for comparative fit index [CIMIN], 0.809 for IFI, 0.907 for GFI, 0.02 for RMR, 0.807 for CFI and 0.074 for RMSEA. These indices suggest that the model fits the data at a generally acceptable level.

According to the first hypothesis, since  $\beta = 0.455$  and  $p = 0.000$ , there is a positive relationship between perceived performance and unplanned purchases. It means that by increasing perceived performance, the possibility of unplanned purchases increases as well.

Hypothesis 2 predicted that there is a positive relationship between the PEU and unplanned purchases. The effect is found to be positive, because  $\beta = 0.108$  and  $p = 0.000$ .

According to hypothesis 3, there is a positive relationship between the attitudes towards use and unplanned purchases. Since results showed that correlation coefficient in this path is 0.461, thus this hypothesis is supported.

According to fourth hypothesis, there is a positive relationship between mental norms during unplanned purchases and purchases. Given that correlation coefficient for this relation is obtained 0.416 and  $p = 0.000$ , this hypothesis is supported.

Finally, the last hypothesis which is There is a positive relationship between the willingness to use and unplanned purchases is also supported because  $\beta = 0.354$  and  $p = 0.000$ . In other word, by increasing willingness to use, the possibility of unplanned purchases increases.

In order to confirm the content validity, 30 questionnaires were submitted to professors and experts and after reviewing and considering the comments and suggestions, the final questionnaire was designed and given to the statistical sample of the study. To assess the reliability (internal stability) of the questionnaire, Cronbach's alpha coefficient was used.

Cronbach's alpha coefficient is a measure for determining reliability, and values greater than 0.7 are indicative of an acceptable reliability. Therefore, according to the above statements, it can be understood that the reliability of the variables is acceptable.

According to the finding, most responds are above average. The mean and standard deviation and the lowest and highest interval confidence of each question were reported separately at the Table 2.

**Table 2** Descriptive statistics of the research questions

	<i>No. of question</i>	<i>No. of questionnaire</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Lower CL</i>	<i>Upper CL</i>
Perceived usefulness	1	360	3.34	1.11	1	5
	2	360	3.25	1.05	1	4
	3	360	3.45	0.921	1	5
	4	360	3.89	0.948	1	5
	5	360	4.04	0.902	2	5
	6	360	4.07	0.948	1	5
Perceived ease	7	360	4.05	0.784	1	5
	8	360	3.76	0.703	1	5
	9	360	3.80	0.645	1	5
	10	360	3.79	0.584	2	5
	11	360	3.59	0.811	1	5
	12	360	4.23	1.27	1	5
Attitude toward use	13	360	3.92	1.21	1	5
	14	360	3.40	0.826	1	5
	15	360	4.05	0.951	1	5
	16	360	3.99	0.974	1	5
	17	360	3.96	1.04	1	5
	18	360	3.81	1.21	1	5
Social norm	19	360	3.73	1.24	1	5
	20	360	3.68	1.28	1	5
	21	360	3.36	1.48	1	5
	22	360	2.80	1.24	1	5
	23	360	2.60	1.18	1	5
	24	360	3.01	0.947	1	5
Willingness to use	25	360	3.10	0.942	1	5
	26	360	3.45	0.682	1	5
	27	360	3.53	0.670	1	5
	28	360	3.41	0.670	1	5
	29	360	3.30	0.775	2	5
	30	360	3.39	0.691	2	5

Also the results of the confirmatory factor analysis are presented separately for each question in the Table 3.

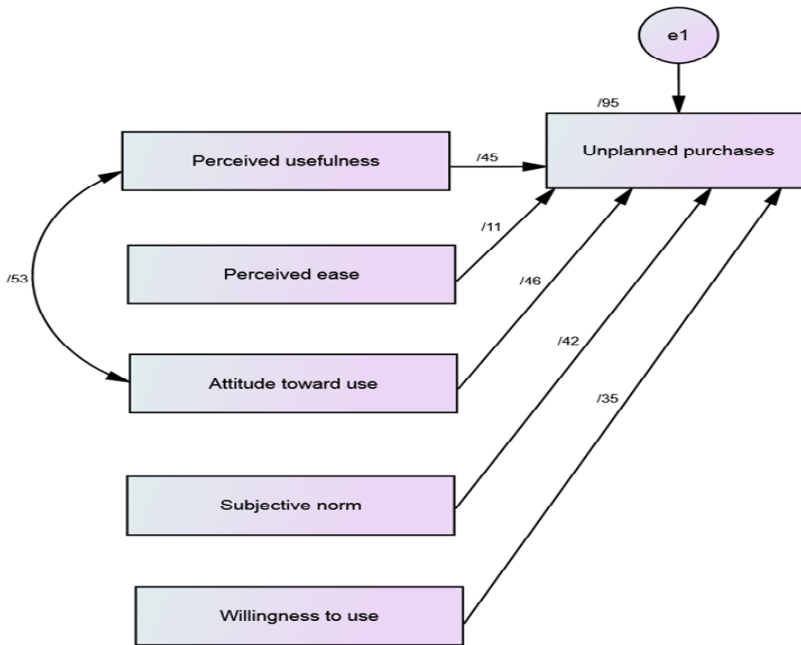
Considering that almost factor loads in most cases are higher than 50.0, and with respect to the partial index P (with a zero value for all the items) and general indicators, it can be concluded that the items are well measured by the data. It should be noted that in order to confirm the factor load value of each question, P value should be less than 0.05. The general measurement model of the research is demonstrated in Figure 2.

**Table 3** Results of confirmatory factor analysis

<i>Dimensions</i>	<i>Number of question</i>	<i>Factor loading</i>	<i>Significance level</i>
Perceived usefulness	1	0.564	***
	2	0.670	***
	3	0.741	***
	4	0.647	***
	5	0.592	***
	6	0.736	***
Perceived ease	7	0.700	***
	8	0.629	***
	9	0.552	***
	10	0.566	***
	11	0.566	***
	12	0.335	***
Attitude toward use	13	0.800	***
	14	0.263	***
	15	0.843	***
	16	0.935	***
	17	0.898	***
	18	0.929	***
	19	0.877	***
	20	0.457	***
Social norm	21	0.430	***
	22	0.975	***
	23	0.717	***
	24	0.177	0/001
	25	0.308	***
Willingness to use	26	0.692	***
	27	0.508	***
	28	0.659	***
	29	0.714	***
	30	0.680	***

The results of research hypothesis measurement, consist of the relationship between variables, regression coefficients and critical ratio of each hypothesis are shown at the Table 4.

**Figure 2** Structural equation model of the research hypotheses (see online version for colours)



**Table 4** The results of research hypothesis measurement

No.	Hypothesis	Correlation coefficient	Critical ratio	P	Result
1	Perceived usefulness → unplanned buying behaviour	0.455	30.787	0.000	Confirm
2	Perceived ease → unplanned buying behaviour	0.108	8.670	0.000	Confirm
3	Attitude toward use → unplanned buying behaviour	0.461	31.239	0.000	Confirm
4	Social norm → unplanned buying behaviour	0.416	33.269	0.000	Confirm
5	Willingness to use unplanned buying behaviour	0.354	28.286	0.000	Confirm

#### 4.2 Discussion

In this research, we had examined the impact the gamification strategy has on unplanned buying behaviour. Specifically, we hypothesised that five dimensions of gamification include perceived usefulness, PEU, attitude toward use, social norms and behavioural intention; all would play a role in creating unplanned purchase by consumers who enter in the market without any purchase intention.

Overall, our findings support the fact that all of the dimensions affect unplanned buying behaviour.

Considering the results, we found that, Marketers should try to increase consumer confidence in this matter that employing a particular system could effect on his or her job usefulness. For this purpose, marketers should sale products which seem to help consumers to save more cost and time in comparison with competitors' products.

Furthermore, if consumers have more PEU about some products, consumers believe that these are free of effort and flexible more. So marketers should design these games as easily as possible.

Various factors such as cultural, social, personal and psychological issues can result of Consumer purchases in great amount. Marketers must take these important factors into account when they can not manage all of them simultaneously (Armstrong and Kotler, 2000). If sellers select their product based on activities and interests of their customers, they may have more sales in comparison with their competitors.

In agreement with a large body of work in the area of consumers' attitude, it is an important point from professional sellers.

Vendors and marketers should display products for sale which have accordance with social norms. Likewise, the possibility of selling products increases and it will leads to a competitive differentiation.

Atmospherics of markets and other professional aspect could influence consumers' emotions. Vendors must design their product professionally in a way that they encourage people to buy them. In fact, they have to pay attention to some points that affects customers and makes them want to re-buy. For example, the designer must first obtain all the necessary information about the product, the market, competitors, and the employer. This information includes the budget, the time it takes to complete the work, the technical issues and regulations, and the objectives of the design and marketing strategy and the features of the product that distinguishes it from the other competitors (Amiri Aghdaie and Mahboubi Renani, 2017).

Particularly recent studies suggest that the physical appearance of a product such as packaging affects the buyer's attention to a product in a store, exam and ultimately buy it. (Ulrikh et al., 2007). From a general perspective in this study, for the first time, we have assessed the impact of each of the psychological aspects of the strategy of gamification on the creation of unplanned purchases. Regarding the standardised coefficients for these assumptions and the significance level of P, all of them are confirmed, and with 99% confidence, it can be said that based on the order of their effectiveness, attitude toward use, perceived performance, subjective norms, willingness to use and perceived ease have a positive effect on unplanned buying behaviour.

## **5 Conclusions**

### *5.1 Theoretical and managerial implication*

Implementation of innovative strategies and methods by organisations could help them to survive among competitors. It is also important to pay attention to this crucial point at the level of chain stores. This study broadly examined the effect of psychological dimensions of gamification strategy on creating unplanned buying behaviour of the persons who come to the store without any intention about purchasing. Specifically, results indicate that marketers by considering consumers' mind in a technical way which is not considered by other vendors could improve the sales of their products. This study also

provides a framework to better understand this essential aspect of unplanned buying behaviour.

## 5.2 Contribution

In the previous studies, the variables of gamification and its dimensions and unplanned purchases have been investigated separately. However in none of the aforementioned studies, these variables were examined together. Based on this paper, vendors can learn about the dimensions of gamification which can have positive and significant effects on unplanned purchases and somehow lead to improving the sales of products.

## 5.3 Limitation and future research

Our study has several limitations. First, we have a limited statistical population for our research consists of 360 persons which limits overall statistical power. While a thousand persons may visit the Dillard's store daily. Since in this study the effect of five perceived usefulness, perceived ease, attitude toward use, social impact and willingness to use on unplanned purchase was examined and considering that there are other important factors in this field, other researchers can also examine their impact on unplanned buying behaviour. Furthermore we had handed out several questionnaire but future researches would benefit by analysing responses from more customers by sending electronic questionnaires to their personal accounts.

## References

- Ajzen, I. and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behavior*, Englewood Cliffs, Prentice-Hall, New Jersey.
- Amiri Aghdaie, S.F. and Mahboubi Renani, E.F. (2017) 'Investigating the impact of packaging innovation on market share', *International Journal of Procurement Management*, Vol.10, No. 4, pp.431–443.
- Amiri Aghdaie, S.F., Teimouri, H. and Torkan, Z. (2017) 'Analyzing the effect of gamification strategy on customers' loyalty (case study: customers of selected branches of Isfahan Mellat Bank)', *New Marketing Research Journal*, Vol. 2, No. 7, pp.135–152.
- Armstrong, G. and Kotler, P. (2000) *Marketing*, 5th ed., pp.153–154, Prentice Hall, Englewood Cliffs, NJ.
- Baumeister, R.F. (2002) 'Yielding to temptation: self-control failure. Impulsive purchasing, and consumer behavior', *Journal of Consumer Research*, Vol. 28, No. 4, pp.670–676.
- Beatty, S.E. and Ferrell, E.M. (1998) 'Impulse buying: modelling its precursors', *Journal of Retailing*, Vol. 74, No. 2, pp.169–191.
- Bell, D.R., Corsten, D. and Knox, G. (2011) 'From point of purchase to path to purchase: how preshopping factors drive unplanned buying', *Journal of Marketing*, Vol. 75, No. 1, pp.31–45.
- Bittner, J. and Shipper, J. (2014). 'Motivational effects and age differences of gamification in product advertising', *Journal of Consumer Marketing*, Vol. 31, No. 5, pp.391–400.
- Blohm, I. and Leimeister, J.M. (2013) 'Design of IT-based enhancing services for motivational support and behavioral change', *Business & Information Systems Engineering*, Vol. 5, No. 4, pp.275–278.
- Bujisic, M., Hutchinson, J. and Parsa, H.G. (2014) 'The effects of restaurant quality attributes on customer behavioral intentions', *Int. J. Contem. Hospitality Manage.*, Vol. 26, No. 8, pp.1270–1291.



- Caulfield, C., Xia, J.C., Veal, D. and PaulMaj, S. (2011) 'A systematic survey of games used for software engineering education', *Modern Applied Science*, Vol. 5, No. 6, pp.28–43.
- Chan, W.Y., To, C.K. and Chu, W.C. (2015) 'Materialistic consumers who seek unique products: how does their need for status and their affective response facilitate the repurchase intention of luxury goods?', *J. Retail. Consum. Serv.*, Vol. 27, No. c, pp.1–10.
- Chang, H.C. (2007) 'Exploring the digital capital indicators of internet banking in Taiwan', *Journal of American Academy of Business*, Vol. 9, No. 1, pp.210–213.
- Chaudhuri, A. and Holbrook, M.B. (2001) 'The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty', *Journal of Marketing*, Vol. 65, No. 2, pp. 81–93.
- Chiu, W. and Leng, H.K. (2016) 'Consumers' intention to purchase counterfeit sporting goods in Singapore and Taiwan', *Asia Pacific Journal of Marketing and Logistics*, Vol. 28, No. 1, pp.23–36.
- Choomovilailuk, R. and Butcher, K. (2014) 'Social effects on unplanned in-store buying', *Social and Behavioral Sciences*, Vol. 148, pp.127–136.
- Conaway, R., and Garay, M. C. (2014) 'Gamification and service marketing', *SpringerPlus*, Vol. 3, No. 653, pp.1–11.
- Conjeo, F. (2014) 'Loyalty 3.0: How to revolutionize customer and employee engagement with big data and gamification', *Journal of Consumer Marketing*, Vol. 31, No. 1, pp.86–87.
- Denny, J. (2014) *Gamification: Intrinsic Motivation for Lasting Engagement*. *eLearning Industry* [online] <https://elearningindustry.com/gamification-intrinsicmotivation-lasting-engagement> (accessed 1 November 2020).
- Deterding, S. (2012) 'Gamification: designing for motivation', *Interactions*, Vol. 19, No. 4, pp.14–17.
- Deterding, S., Dixon, D., Khaled, R. and Nacke, L. (2011) 'From game design elements to gamefulness: defining 'gamification'', *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*, ACM, Tampere, Finland.
- Domínguez, A., Saenz-de-Navarrete, J., De-Marcos, L., Fernández-Sanz, L., Pagés, C. and Martínez-Herráiz, J.-J. (2013) 'Gamifying learning experiences: practical implications and outcomes', *Comput. Educ.*, Vol. 63, No. 1, pp.380–392.
- Gummesson, E., Kuusela, H. and Närvänen, E. (2014) 'Reinventing marketing strategy by recasting supplier/customer roles', *Journal of Service Management*, Vol. 25, No. 2, pp.228–240.
- Ha, J. and Jang, S. (2010) 'Perceived values, satisfaction, and behavioral intentions: the role of familiarity in Korean restaurants', *Int. J. Hospitality Manage.*, Vol. 29, No. 1, pp.2–13.
- Hamari, J. (2015) 'Do badges increase user activity? A field experiment on the effects of gamification', *Computers in Human Behavior*, Vol. 71, No. c, pp.469–478.
- Hamari, J. (2019) 'Gamification', in Ritzer, G. and Rojek, C. (Eds.): *The Blackwell Encyclopedia of Sociology*, John Wiley & Sons, New York.
- Hamari, J. and Koivisto, J. (2015) 'Why do people use gamification services?', *International Journal of Information Management*, Vol. 35, No. 4, pp.419–431.
- Han, H., Back, K.-J. and Barrett, B. (2009) 'Influencing factors on restaurant customers' revisit intention: the roles of emotions and switching barriers', *Int. J. Hospitality Manage.*, Vol. 28, No. 4, pp.563–572.
- Harman, K., Koohang, A., and Paliszkiwicz, J. (2014) 'Scholarly interest in gamification: a citation network analysis', *Industrial Management and Data Systems*, Vol. 114, No. 9, pp.1438–1452.
- Harwood, T. and Garry, T. (2015) 'An investigation into gamification as a customer engagement experience environment', *J. Serv. Mark.*, Vol. 29, Nos. 6/7, pp.533–546.

- Hasbullah, N.A., Osman, A., Abdullah, S., Salahuddin, S.N., Ramlee, N.F. and Soha, H.M. (2016) 'The relationship of attitude, subjective norm and website usability on consumer intention to purchase online: an evidence of Malaysian youth', *Procedia Economics and Finance*, Vol. 35, pp.493–502.
- Hoch, S.I. and Loewenstein, G.F. (1991) 'Time-inconsistent preferences and consumer self-control', *Journal of Consumer Research*, Vol. 7, No. 4, pp.492–507.
- Högberg, J., Hamari, J. and Wastlund, E. (2019) 'Gameful experience questionnaire (GAMEFULQUEST): an instrument for measuring the perceived gamefulness of system use', *User Modelling and User-Adapted Interaction*, Vol. 29, No. 3, pp.619–660.
- Hostler, R.E., Yoon, V.Y., Guo, Z., Guimaraes, T. and Forgiunne, G. (2011) 'Assessing the impact of recommender agents on on-line consumer unplanned purchase behavior', *Information and Management*, Vol. 48, No. 8, pp.336–343.
- Huotari, K. and Hamari, J. (2017) 'A definition for gamification: anchoring gamification in the service marketing literature', *Electronic Markets*, Vol. 27, No. 1, pp.21–31.
- Insley, V., and Nunan, D. (2014) 'Gamification and the online retail experience', *International Journal of Retail & Distribution Management*, Vol. 42, No. 5, pp.340–351.
- Janakiraman, N., Syrdal, H.A. and Freling, R. (2015) 'The effect of return policy leniency on consumer purchase and return decisions: a meta-analytic review', *Journal of Retailing*, <http://dx.doi.org/10.1016/j.jretai.2015.11.002>.
- Jang, S.S. and Namkung, Y. (2009) 'Perceived quality, emotions, and behavioral intentions: application of an extended Mehrabian-Russell model to restaurants', *Journal of Business Research*, Vol. 62, No. 4, pp.451–460.
- Jen, W.Y. and Hung, M.C. (2010) 'An empirical study of adopting mobile healthcare service: the family's perspective on the healthcare needs of their elderly members', *Telemedicine and e-Health*, Vol. 16, No. 1, pp.41–48.
- Jin, N., Lee, S. and Lee, H. (2015) 'The effect of experience quality on perceived value, satisfaction, image and behavioral intention of water park patrons: new versus repeat visitors', *Int. J. Tour. Res.*, Vol. 17, No. 1, pp.82–95.
- Karahanna, E. and Straub, D.M. (1999) 'The psychological origins of perceived usefulness and ease-of-use', *Information & Management*, Vol. 35, No. 4, pp.237–250.
- Küçükergin, K.G. and Dedeoğlu, B.B. (2014) 'The importance of employee hospitality and perceived price in the hotel industry', *Anatolia Int. J. Tour. Hospitality Res.*, Vol. 25, No. 2, pp.254–267.
- Ladhari, R., Soudien, N. and Dufour, B. (2017) 'The role of emotions in utilitarian service settings: The effects of emotional satisfaction on product perception and behavioral intentions', *Journal of Retailing and Consumer Services*, Vol. 34, No. c, pp.10–18.
- Ling, L.P. and Yazdanifard, R. (2015) 'What Internal and External Factors Influence Impulsive Buying Behavior in online Shopping?', *Global Journal of Management and Business Research: E Marketing*, Vol. 15, No. 5.
- Lou, Y., Wang, W. and Yang, X. (2017) 'Customers' attitude on new energy vehicles' policies and policy impact on customers' purchase intention', *Journal of Energy Procedia*, Vol. 105, No. 2017, pp.2187–2193.
- Mainemelis, C. (2001) 'When the muse takes it all: a model for the experience of timelessness in organizations', *Academy of Management Review*, Vol. 26, No. 4, pp.548–565.
- Mayer, I.S. (2009) 'The gaming of policy and the politics of gaming: a review', *Simulation & Gaming*, Vol. 40, No. 6, pp.825–862.
- Meloni, W. and Gruener, W.M.R. (2012) *Gamification in 2012* [online] <http://goo.gl/75Ph5> (accessed 20 June 2020).
- Moncrief, W.C., Marshall, G.W. and Rudd, J.M. (2015) 'Social media and related technology: drivers of change in managing the contemporary sales force', *Business Horizons*, Vol. 58, No. 1, pp.45–55.

- Nicholson, S. (2012) 'A user-centered theoretical framework for meaningful gamification', *Proceedings GLS*, Vol. 8.
- Nuseir, M. T. (2020) 'Is advertising on social media effective? An empirical study on the growth of advertisements on the Big Four (Facebook, Twitter, Instagram, WhatsApp)', *International Journal of Procurement Management*, Vol. 13, No. 1, pp.134–142.
- Okumus, B. and Bilgihan, A. (2014) 'Proposing a model to test smartphone users' intention to use smart applications when ordering food in restaurants', *Journal of Hospitality and Tourism Technology*, Vol. 5, No. 1, pp.31–49.
- Oliver, R.L. (2010) *Satisfaction: A Behavioral Perspective on the Consumer*, Routledge, Pareigis, New York, NY.
- Palmer, D., Lunceford, S. and Patton, A.J. (2012) 'The engagement economy: how gamification is reshaping businesses', *Deloitte Review*, Vol. 11, No. 11.
- Park, H.J. and Bae, J.H. (2014) 'Study and research of gamification design', *International Journal of Software Engineering and Its Applications*, Vol. 8, No. 8, pp.19–28.
- Pavlou, P.A. and Chai, L. (2002) 'What drives electronic commerce across cultures? a cross-cultural empirical investigation of the theory of planned behavior', *Journal of Electronic Commerce Research*, Vol. 3, No. 4, pp.240–253.
- Pedreira, O., García, F., Brisaboa, N. and Piattini, M. (2015a) 'Gamification in software engineering – a systematic mapping', *Information & Software Technology*, Vol. 57, No. 1, pp.157–168.
- Petridis, P., Hadjicosta, K., Shi, V.G., Dunwell, I., Baines, T., Bigdeli, A. and Uren, V. (2015b) 'State-of-the-art in business games', *International Journal of Serious Games*, Vol. 2, No. 1, pp.55–69.
- Poncin, I., Garnier, M., Ben Mimoun, M.S. and Leclercq, T. (2017) 'Smart technologies and shopping experience: are gamification interfaces effective? The case of the Smartstore', *Technological Forecasting & Social Change*, Vol. 124, No. c, pp.320–321.
- Quinn, R.W. (2005) 'Flow in knowledge work: High performance experience in the design of national security technology', *Administrative Science Quarterly*, Vol. 50, No. 4, pp.610–641.
- Raasch, C., and von Hippel, E. (2013) 'Innovation process benefits: The journey as reward', *MITSloan Management Review*, Vol. 55, No. 1, pp.33–39.
- Renny, Guritno, S. and Siringoringo, H. (2013) 'Perceived usefulness, ease of use, and attitude towards online shopping usefulness towards online airlines ticket purchase', *Social and Behavioral Sciences*, Vol. 81, pp.212–216.
- Robson, K., Plangger, K., Kietzmann, J., McCarthy, I. and Pitt, L. (2014) 'Understanding gamification of consumer experiences', *Adv. Consum. Res.*, Vol. 42, pp.352–356.
- Robson, K., Plangger, K., Kietzmann, J.H., McCarthy, I. and Pitt, L. (2015) 'Is it all a game? Understanding the principles of gamification', *Business Horizons*, Vol. 58, No. 4, pp.411–420.
- Saade, R. and Bahli, B. (2005) 'The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: an extension of the technology acceptance model', *Information & Management*, Vol. 42, No. 2, pp.317–327.
- Seaborn, K., and Fels, D.I. (2015) 'Gamification in theory and action: A survey', *International Journal of Human-Computer Studies*, Vol. 74, No. C, pp.14–31.
- Singh, S.P. (2013) 'Gamification: a strategic tool for organizational effectiveness', *Anveshak, International Journal of Management*, Vol. 1, No. 1, pp.108–114.
- Stock, R.M., Oliveira, P. and von Hippel, E. (2015) 'Impacts of hedonic and utilitarian user motives on the innovativeness of user-developed solutions', *Journal of Product Innovation Management*, Vol. 32, No. 3, pp. 89–403.
- Talukdar, D. and Lindsey, C. (2013) 'To buy or not to buy: consumers' demand response patterns for healthy versus unhealthy food', *Journal of Marketing*, Vol. 77, No. 2, pp.124–138.
- Ulrikh, E. et al. (2007) 'How important intrinsic and extrinsic product attributes affect purchase decision', *Food Quality and Preference*, Vol. 18, No. 1, pp.133–138.

- Verplanken, B. and Sato, A. (2011) 'The psychology of impulse buying: an integrative self-regulation approach', *Journal of Consumer Policy*, Vol. 34, No. 2, pp. 97–210.
- Werbach, K. and Hunter, D. (2012) *For the Win: How Game Thinking Can Revolutionize your Business*, Wharton Digital Press, Pennsylvania.
- Witt, M., Scheiner, C. and Robra-Bissantz, S. (2011) 'Gamification of online idea competitions: insights from an explorative case', *Informatik 2011: Informatik Schafft Communities Band*, p.192.
- Wu, S. (2003) 'The relationship between consumer characteristics and attitude toward online shopping', *Marketing Intelligence & Planning*, Vol. 21, No. 1, pp.37–44.
- Yang, Y., Asaad, Y. and Dwivedi, Y. (2017) 'Examining the impact of gamification on intention of engagement and brand attitude in the marketing context', *Computers in Human Behavior*, Vol. 73, No. C, pp.459–469.
- Yi, S. and Baumgartner, H. (2011) 'Coping with guilt and shame in the impulse buying context', *Journal of Economic Psychology*, No. 3,
- Zichermann, G. and Cunningham, C. (2011) *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps*, O'Reilly Media, Sebastopol.
- Zichermann, G. and Linder, J. (2010) *Game-based Marketing: Inspire Customer Loyalty Through Rewards, Challenges, and Contests*, John Wiley and Sons, Inc, Hoboken, New Jersey.
- Zichermann, G. and Linder, J. (2013) *The Gamification Revolution: How Leaders Leverage Game Mechanics to Crush the Competition*, McGraw Hill Professional, New York.