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The Effect of Perceived Socially Motivated Gamification on Purchase Intention: Does It Really Work?

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ABSTRACT

Companies try to be innovative in their relationships with customers. As organizations seek new ways to differentiate themselves and to have more market share, gamification has emerged as a new concept in their marketing efforts. Many third-party organizations now utilize gamified services which grasp the attention and interest of many potential customers with its game-like features. These services form the basis of our research in understanding how people react to such gamified experience. In order to gather data, survey method was implemented to people who reside in Istanbul, use gamified websites, applications and mostly under 25 years old. Results implicate that there is strong correlation between users' attitude towards gamification and their purchase intention regarding the product which advertised in these gamified services. This paper contributes to literature in a unique way in which a connection between purchase intention and attitude towards gamification is proposed. Additionally, it is the first empirical gamification research made in Turkey.
Keywords: Gamification, Social Influence, Reciprocal Benefit, Network Exposure, Purchase Intention.

Algılanan Sosyal Güdülenmiş Oyunlaştırmanın Alım Niyetine Etkisi: Gerçekten İşe Yarıyor mu?

ÖZ

Firmalar müşterileriyle olan ilişkilerinde yenilikçi olmaya çalışmaktadırlar. Kendilerini farklılaştırmada ve daha fazla pazar payına sahip olmada pazarlama çabalarının oyunlaştırılması, organizasyonlar için yeni bir konsept olarak ortaya çıkmıştır. Birçok üçüncü parti firması artık oyunlaştırılmış hizmetleri kullanmakta ve oyuna benzer özellikleri ile birçok potansiyel müşterinin ilgisini ve dikkatini yakalamaktadırlar. Bu hizmetler, insanların böyle oyunlaştırılmış tecrübelere nasıl tepki verdiklerini anlamada, bu araştırmanın temelini oluşturmaktadır. Veri toplamak amacı ile anket metodu, İstanbul'da yaşayan, oyunlaştırılmış web sitelerini ve uygulamalarını kullanan ve çoğunlukla 25 yaşının altında bulunan bir örneklem grubuna uygulanmıştır. Sonuçlar, kullanıcıların oyunlaştırmaya olan tavırları ile onların oyunlaştırılmış hizmette sunulan ürüne karşı olan alım niyeti arasında kuvvetli bir korelasyon olduğunu göstermektedir. Bu makalede, oyunlaştırmaya olan tavır ile alım niyeti arasında daha önce benzeri olmayan bir bağlantı önerilerek, literature önemli bir katkı yapılmaktadır. Ayrıca bu çalışma Türkiye'de oyunlaştırma üzerine yapılan ilk ampirik çalışmadır.
Anahtar Sözcükler: Oyunlaştırma, Sosyal Tesir, Karşılıklı Fayda, Ağa Maruz Kalma, Alım Niyeti

Introduction

The technological advances (especially internet-based ones) have attracted more people world wide web than ever before. Today billions of people are inclined to join these communities to socialize and even to purchase their necessities. Online activities like shopping, talking, dating, working and learning have become important parts of today's modern lives **(**Kim & Lee, 2015).

Social networking services (SNS) such as Facebook, Twitter, Instagram are meeting places for social activities and house features like profile-building and various forms of content sharing. In contrast to the general nature of SNSs, some social networking services are specifically focused on gamifying a certain elements, within activities such as music listening, TV watching, shopping, health care, exercising and more, which presents a common mutual interest for all users of the SNSs. Seaborn and Fels **(**2015**)** describe the gamification as a process of using interactive systems to motivate and engage end-users through the use of game elements and mechanics. Parallel to the description, these special-interest SNSs offer gamified services that provide game-like features. For example, setting objectives and rewarding accordingly, monitoring activities related to the behaviour of the social network and encourage the users for more. Users of these gamification services receive not only

enjoyment and a sense of playfulness but also reciprocal benefits through other community members - social feedback loops - emboldening people to continue these activities (Hamari & Koivisto, 2013). Recently, Turkcell - telecommunications service provider in Turkey - came up with a promotion idea which sets a decent example for gamification processes. In this gamified service, customers are to shake their mobile phones via smart phone application and as a result, rewarded with variety of services for their smart phones. By setting a challenge and rewarding at the end, this gamified promotion activity can be qualified as a proper example in understanding gamification process.

Undoubtedly, using gamified services depend on some social factors. Following Hamari and Koivisto (2013), we examined the effects of these factors on attitudes towards gamification. Additionally, we propose that there might be a strong correlation between these attitudes and purchase intention. Identification of this correlation is the main goal of this paper. To accomplish this goal it was investigated that to what degree social factors related to network exposure, social influence, reciprocal benefits affect attitude towards gamification and intentions to purchase.

Theoretical Background and Hypothesis Development

Gamification has been a commercial success for social platforms in a way that creating relationships between the platform and users, increasing popularity of platform consequently **(**Dominguez et al, 2013). Huotari and Hamari **(**2011**)** define the gamification as a process of supporting the customers' overall value creation by providing gameful experiences. Gamification is also defined by Deterding et al. **(**2011) as *the use of game elements in non-game contexts to motivate and increase user activity***.** These contexts include service layers of reward, reputation systems such as points, badges, levels and leader boards. For instance, Foursquare is a commonly known gamified SNS. It uses game elements like rewards, points, levels, stars to increase user activity for non-game contexts (purchasing, marketing, advertisement etc.). When people check in a place, popularity of that place increases, creating intentions to be at that place through encouragement. Confection firms sell three pants for the price of two, sport companies encourage their custumers to make more sport with gamification design, restaurants pay for their majors (the most checked-in person in a place) or shopping websites give ranks to their seller as "best seller, confidence seller etc.". Some social platforms execute advertisement programs intensely. They offer joyful games, videos, musics; and during this activities, commercial ads are introduced in many ways. Loyalty cards, credits card bonuses and chips, gift card campaigns, rewards for shopping are types of gamification because they designate a goal to complete for customers or players.

Regarding the game elements which are used for gamification, social factors emerge as important components (Zichermann, 2011). Social influence shows how an individual perceives others regarding the target behaviour and whether they expect one to perform it (Ajzen, 1991; Hamari & Koivisto, 2013). When the behaviour is supported and socially accepted, social influence triggers positive effect on the attitude related to that behaviour (Hamari & Koivisto, 2013).

H1: *Social influence has a positive effect on attitude toward the use of gamification.*

Marketing consists of actions taken to create, maintain and grow relationships with customers (Kotler & Armstrong, 2014). Because of this relationship, marketing process is a mutual process that consumers get services or products in exchange, producers/vendors get money, loyalty, value etc. Therefore, marketing can be defined as a reciprocal process that offers benefits for consumers and producers/vendors. Reciprocal benefit can be considered as a form of social usefulness of the service or product (Hsu & Lin, 2008). Consumers are prone to buy services or products if they perceive them useful. According to Salim et al. (2011) research, it was proved that reciprocal benefits has strong impact on attitudes of people. Following the literature and, Hamari and Koivisto (2013), we believe that if one perceives those gamified services useful, a positive attitude towards that service will occur.

H2: *Reciprocal benefit positively influences the attitude toward the use of gamification.*

The internet has significantly expanded over the past ten years and has become part of our lives. There are many reasons given for the growth of internet use. First of all, its size has grown as a information source, it has become more user friendly, more accessible and less expensive and it is effective in marketing and social relationships. Especially in 21st century internet affects coustomers in many ways (O'Cass & Fenech, 2003; Mangold & David, 2009). Instead of maintaining their attitudes in isolation, people indulge in rich social context.

Attitudes are held by people who are embedded within social networks, by people who occupy specific role and by people who are identified with certain groups or categories. It seems obvious that these features are likely to influence attitudinal properties and processes (Visser & Mirabile, 2004). Increasing internet use reflects more effect on people's attitudes by offering more friends, more information or more choice, as a result of increscent exposure to network. Hamari and Koivisto (2013) are also supports that idea and their results are the evidence of the positive effect of network exposure on attitudes.

H3: *Network Exposure has a direct effect on the attitude toward the use of gamification.*

The expectations of the outcomes that result from behaviors are important antecedents to behavioral intentions. According to Ajzen (1991), when a person's attitude towards engaging in a behavior is positive, then he/ she is more prone to engage in that behavior. Furthermore, when the consumer attitude towards gamification is positive, his or her attitude towards gamification will be more likely to be positive (Chen, 2007). Hartman and Ibanez (2012), and Malhotra and Galletta (1999**)** also affirm that people who have positive attitudes to a behavior will choose that behavior instead of others.

As for attitude towards gamification, concept remains the same. There are different opinions about this gamification concept in literature. While some assume it as a new name for traditional marketing tools or as a new way of exploiting customers, some regard it as a way of enhancing the value of service. Although these opposite opinions, gamification has become a trend in service marketing (Hamari, 2013). Deterding and his friends (2011) assert that game technology and game design methods could be beneficial if they were used outside of game industry. The concept of gamification has been explored primarily in the marketing area but its applications has extended to health, education, environment areas, confirming its description (Simoes et al., 2013). This idea has been successfully used in many businesses to increase user engagement. At this point, we fundementally propose that if a potantial customer has a positive attitude towards a gamified service, this can induce purchase intention to be created for service or product being introduced to particular customer.

H4: *If a consumer has a positive attitude towards gamification, his/her intentions to purchase will be also positive.*

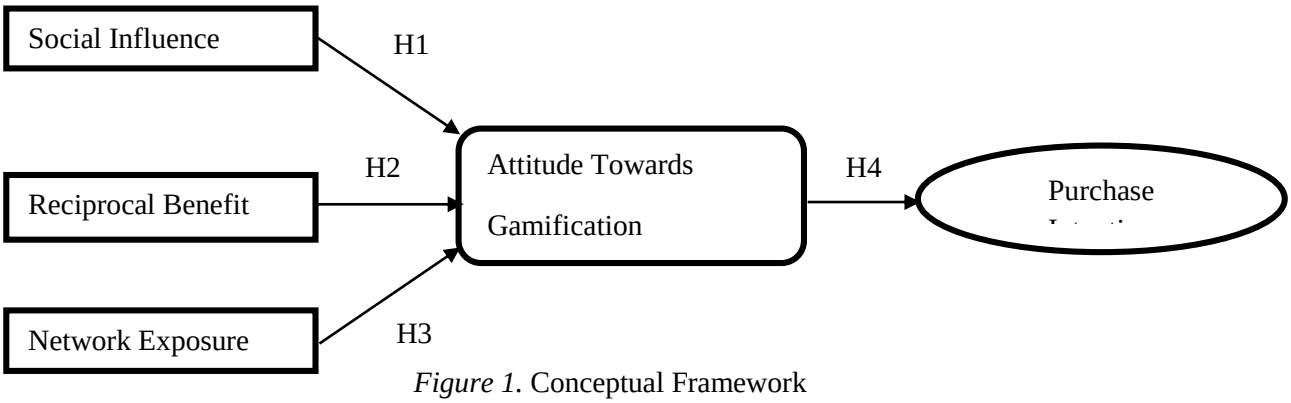

Figure 1. Conceptual Framework

Method

Sample and Data Collection

The sample of the study was selected from the people who reside in Istanbul and use gamified web sites and applications. It was decided that with its huge population and important role in e-commerce, Istanbul is deemed suitable for this study. In addition, as Istanbul houses a high number of universities and education institutions, it is very convenient to reach young population which frequently use gamified web sites and applications. All these advantages make Istanbul appropriate place for our research.

Convenience sampling method was used in selecting the target sample. However, people who use gamified web sites and applications were specifically targeted while conducting the survey. Questionnaires were implemented to respondents via face-to-face interviews. At the end of a three-week survey effort, 325 valid observations were gathered. The first page of the questionnaire contains the instructions and second page consists the items to be responded. The participants were requested to answer all the questions based on their experience they had in those websites and applications. Items were presented with 5-Likert scale, with an anchor of 1 for "strongly disagree" to 5 for "strongly agree", respectively. According to Hair et.al (2010, p. 635), minimum sample size ought to be 100 for models containing five or fewer constructs each with more than three items and with high item communalities. Structure in this study has four constructs, with more than four items and with communalities ranging between 0.637 and 0.898. Consequently, the research has a highly acceptable sample size.

Measures

Following the implications from previous studies, structural equation (Figure 1) model is formed in order to elicit the effects of social factors on the purchase intentions of the users that are exposed to gamification. Social Influence, Reciprocal Benefit, Network Exposure and Attitudes Towards Gamification scales were taken from Hamari and Koivisto (2013) and Purchase Intention was adapted from the studies of Dodds et al. (1991**)** and Lu et al. (2014).

Table 1
Measures and Items

Construct and Measurement Item	Factor Loadings	Reference
Social Influence $\bar{X}$*=3.98 σ=0.79*		Hamari &
People who influence my attitudes would recommend these activities.	.838	Koivisto, 2013
People who are important to me would think positively of me participate in these activities.	.926	
People who I appreciate would encourage me to participate in these activities.	.984	
My friends would think participating in these activities is a good idea.	.902	
Reciphoral Benefit $\bar{X}$*=3.91 σ=0.70*		Hamari &
I find that participating in the community can be mutually helpful.	.824	Koivisto, 2013
I find my participation in the community can be advantageous to me and other people.	.994	
I think that participating in the community improves my motivation to exercise.	.774	
The community encourages me to exercise.	.958	
Network Exposure $\bar{X}$*=4.16 σ=0.55*		Hamari &
I have a lot of friends in community who follow my activities.	.763	Koivisto, 2013
Many people follow my activities in the community.	.857	
I follow many people in the community.	.880	
I have many friends in the community.	.787	
Attitude Towards Gamification $\bar{X}$*=4.24 σ=0.64*		Hamari &
All things considered, I find using these activities to be a wise thing to do.	.863	Koivisto, 2013
All things considered, I find using these activities to be a good idea.	.839	

Table 1. Cont.

Construct and Measurement Item	Factor Loadings	Reference
All things considered, I find using these activities to be a positive thing.	.971	
All things considered, I find using these activities to be favorable.	.815	
Purchase Intention $\bar{X}=3.92\ \sigma=0.76$		Dodds et al., 1991
If i were going to buy this product, I would consider the activity regarding this product.	.735	Lu et al., 2014
At the ratings shown, I would consider buying this product.	.874	
It is possible that I would buy this product.	.943	
If I am in need, I would buy this (product).	.871	
Likelihood of purchasing this product is high.	.810	

Note: Loadings and cross-loadings are oblique-rotated.

Non-Response Bias

If the responses of participants significantly differ from non-respondents, non-response bias occurs (Menachemi, 2010). In order to test whether non-response bias present in the research, t-test was conducted between the early and late respondents with regard to the answers. Early respondents were designated from the first 80 participants and late respondents from the last 80 participants. We did not encounter any significant difference between the early and late respondents. Thus, the research does not have non-response bias problem (Lages, Jap & Griffith, 2008).

Common Method Variance

All measures are gathered from the same source, thus testing common method variance was compulsory. Common Method Variance (CMV) mentions to the amount of false covariance shared among variables because of the common method used in data collection (Malhotra, Kim & Patil, 2006). If common method variance is not tested, measurement errors might occur in research and it threatens the validity of the conclusions and produce a false explanation for the observed correlation (Podsakoff, Mackenzie, Lee & Podsakoff, 2003). Correlational marker technique is used in order to detect the common method variance in the study (Lindell & Whitney, 2001). Correlational marker technique measures the partial correlation between marked variable and the others. When partial correlation removed, observed correlation might alter. In that case, researcher can come to a decision that common method variance is present. The results show no alteration of observed correlation that stands for common method variance won't be a problem in this research.

Results

Characteristics of Sample

The majority of the respondents are between 18 and 25 years old (59,7%), have associate degree (38,2%) and male (54,2%). Detailed data is presented in Table 2.

Data Analysis

The data derived from survey was analyzed with confirmatory factor analysis to make sure that antecedents are perceived as intended. The LISREL statistical analysis program was used to analyze structural equation and WarpPls statistical analysis program was used to test validity and reliability of the variables. During the hypotheses testing process, Chi-square test, Comparative Fit Index (CFI), Normed Fit Index (NFI), Incremental Fit Index (IFI) and Root Mean Squared Error of Approximation (RMSEA) were used to test the model's goodness-of-fit (Lee & Jeong, 2014).

Table 2
Demographic Profile of Sample

	Frequency	***Percentage (%)***
Gender		
Male	176	54.2
Female	149	45.8
Age		
18-25	194	59.7
26-35	112	34.5
36-45	14	4.3
46-55	5	1.5
Education		
Elementary School	13	4.0
High School	89	27.4
Associate Degree	124	38.2
Bachelor's Degree	58	17.8
Master's Degree	38	11.7
Ph. D. Degree	3	0.9
Total	***325***	***100***

Validity and Reliability Tests

Reliability and validity shows the trustworthiness and quality of a qualitative research (Golafshani, 2003). Cronbach's alpha (CRA) value is commonly used to evaluate the internal consistency of measures. Values equal to and higher than 0.7 are generally considered adequate (Bagozzi & Yi, 1988; Hair et al., 2010: p. 123). Inter-item reliability of items was examined to assess the reliability of the research model. Warppls statistics program returned Cronbach's alpha values between 0.840 - 0.933 which means that all variables have high internal consistency (Hair et al., 2010:125).

Construct validity consists of convergent validity and discriminant validity. Convergent validity was investigated through average variance extracted and factor loadings. All AVE values are greater than 0.5 and further, all loadings have 0.01 significance level (Table 1), resulting in convergent validity for all constructs (Lee & Jeong, 2014). In order to control discriminant validity of constructs Fornell& Larcker (1981) criterion was used. According to pertinent criterion, square root AVE values of each variable have to be greater than correlations between the constructs. As shown in the Table 3, the model has discriminant validity for all cases. Consequently, research model can be considered meaningful and statistically acceptable. Discriminant and convergent validity test results implicate that structure model has acceptable construct validity.

Table 3
Correlations among Latent Variables with Square Root of AVEs

Variables	Cronbach α	AVE	Rec.Ben.	Soc.Inf.	Net.Exp.	Attitu.	Purc.Int.
Rec.Ben.	0.911	0.788	**0.888**	0.496	0.325	0.441	0.397
Soc.Inf.	0.933	0.834		**0.913**	0.440	0.564	0.490
Net.Exp.	0.840	0.677			**0.823**	0.487	0.377
Attitu.	0.895	0.762				**0.873**	0.614
Purc.Int.	0.902	0.719					**0.848**

Note: Square roots of average variances extracted (AVEs) are shown on diagonal in bold.

Structural Equation Model

According to Covariance based structural equation method (CB-SEM) results; Chi-Square=343.59 and df=182 with Chi-Square/df=1,888; RMSEA = 0.077, p- value= 0.000; NFI = 0.90; CFI = 0.92; RMR = 0.043. Consequently, model structure fit values are in good condition and goodness-of-fit statistics suggest that model fits are acceptable (Tabachnick & Fidel, 2001; Steiger, 2007; Kline, 2005; Brown, 2006; Thompson, 2004; Kelloway, 1989; Hu & Bentler, 1999). Threshold values and fit statistics obtained from LISREL are demonstrated in Table 4.

Table 4
Fit Results of Measurement Model

Fit Index	Value Acquired	Thresholds
Ki kare (χ^2)/ sd	1,888	≤ 3 Perfect Fit
RMSEA	0,077	≤ 0,08 Good Fit
RMR	0,043	≤ 0,05 Good Fit
CFI	0,92	≥ 0,90 Good Fit
NFI	0,90	≥ 0,90 Good Fit
IFI	0,92	≥ 0,90 Good Fit

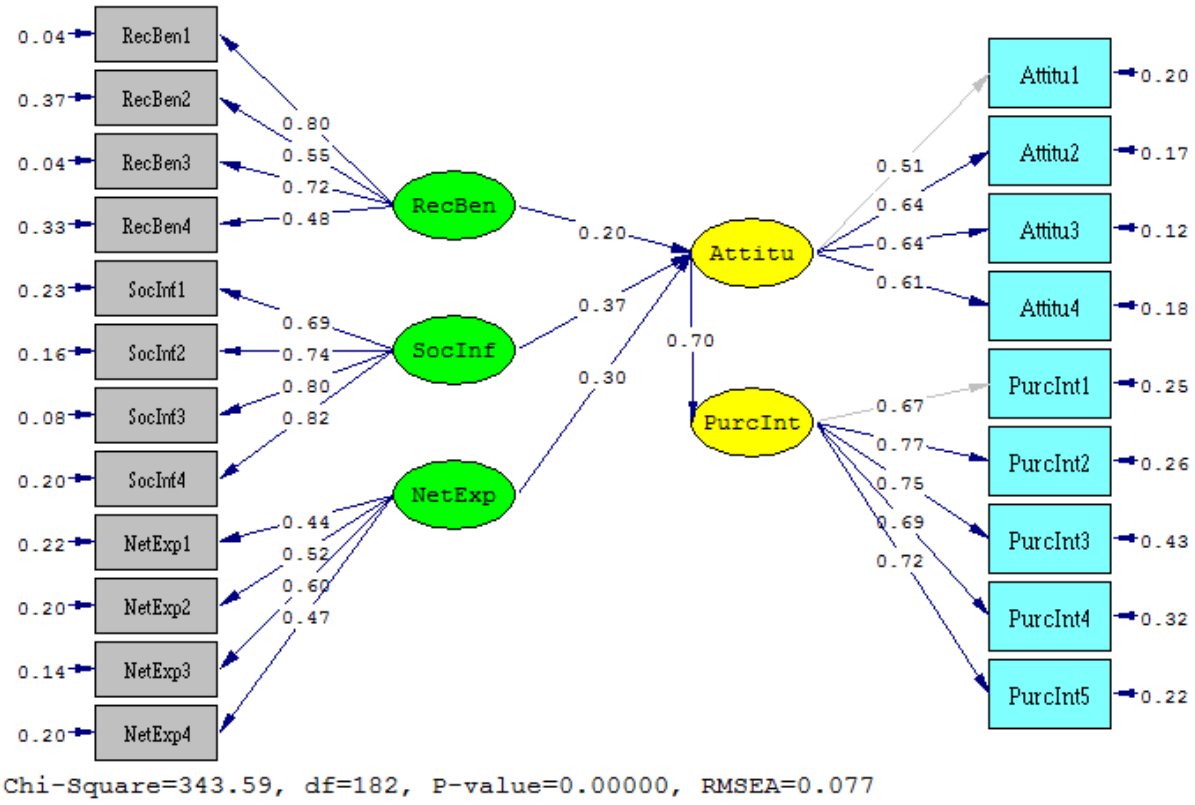

Figure 2. Standardized Solution Output from LISREL

Table 4
Results of Structural Model

Structural Path	Path Coefficients	t-value	Hypotheses
Social Influence → Attitude Towards Gamification (H1)	0.37**	3.93	Supported
Reciprocal Benefit → Attitude Towards Gamification (H2)	0.20**	2.39	Supported
Network Exposure → Attitude Towards Gamification (H3)	0.30**	3.38	Supported
Attitude Towards Gamification → Purchase Intention(H4)	0.70**	7.38	Supported

GFI = 0.82, ** p < 0.01.

Discussion and Conclusion

In this paper, it was investigated how social factors affect attitude towards the use of gamification and intentions to purchase product or services that introduced in the gamified service. The empirical results point out that social factors, especially social influence and network exposure, are determinative antecedents for attitudes towards gamification.

The literature studies implicate positive relationships between social influence and attitude towards gamification. The results presented 0,37 beta coefficient related to social influence and attitudes towards gamification. This coefficient is very similar with the findings of Hamari and Koivisto (2013). According to literature, reciprocal benefit is significantly associated with attitude and intentions. Salim et al. (2011) have proved this relationship and stated a 0,19 coefficient. Analysis results verify the literature according to the path coefficients acquired. Although the samples are different related to demographics and culture, our findings are consistent with Salim et al. (2011). It can be deduced that the effect of reciprocal benefit is almost stable on people's attitudes towards gamification. O'Cass and Fenech (2003) and Visser and Mirabile (2004) state that network exposure has increased especially for past ten years and this increment positively affect the people attitudes towards gamified services. The results confirm those statements and show that network exposure has a significant role on building up people's attitudes towards gamification.

Previous studies affirm that attitudes positively affect the intentions and for this people who have positive attitudes to a specific behavior will choose that behavior instead of others (Ajzen, 1991; Chen, 2007; Hartman & Ibanez, 2012; Malhotra & Galletta, 1999). Our results that have a remarkable beta value (0.70) support their findings and it is coherent with previous results. The beta coefficient also demonstrates the important role on purchase intention.

As the first empirical study made in Turkey on gamification, this paper provides several implications both academically and managerial. Structural equation returned results resembling to the work of Hamari and Koivisto (2013) in explaining the attitude towards gamification, considering the similar demographic characteristics of the samples. Results also confirm Kotler and Keller (2012, p. 153) how consumers socially affected from reference groups in their behaviours.

However, major interesting finding is that, according to calculations, attitude towards gamification has a tremendous impact on purchase intention. This finding implicates that customers are highly affected from gamified activities, particularly in decision making processes for the services or products they are interested in. Purchase intention involves evaluating procedure (Kotler *and* Armstrong, 2014, p. 177). Nevertheless, high effect size as a result of calculations might hint that known procedures can be altered or even bypassed. This finding is worthy of investigation for further studies.

By building a brand new connection, this paper opens a new doorway to a series of studies examining gamification on marketing efforts. Academicians can compel this notion to extend the dimensions of gamification both domestically and internationally. How these gamification procedures takes effect is still an unknown territory and remains to be clarified. As a managerial implication, this study inspires organizations to utilize promotion campaigns in vast gamified service sector. We hope that results of this research will be helpful to researchers for further research and to organizations for practicing gamified promotions.

Limitations and Further Research

Although the research has positive sides and contributions to literature it also has a number of limitations. The paper does not include a demographic study which measures differences according to demographic qualities. If further research is done on the subject, researchers will probably encounter interesting results.

Three social factors (social influence, reciprocal benefit and network exposure) were used in the study to define attitudes towards gamification. These dimensions are effective on attitude but more effective and better antecedents can be found to define attitudes towards gamification. Instead of social factors, economic or psychological factors - as independent variables - can be used. Also we believe that important concepts such as brand loyalty or relationship continuity are good examples to test attitude towards gamification in for future studies.

Undoubtly, purchase intention for new products changes dramatically after evaluating alternatives (Kotler & Keller, 2012, p. 170). Additionally, purchase intention also encompasses already purchased products under the name of "postpurchase intention" (Kotler & Armstrong, 2014, p. 178). In future studies, survey items can be prepared to answer this discrimination need.

Another concern is about the sector of gamification. The survey questions measured view of consumers to effect of gamification on purchase intention about all kind of services or products. If a survey targeting a particular product or sector that use gamification designs were prepared, different results could have been found.

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References

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211.

Bagozzi, R. and Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science*, *16*, 74-94.

Brown, T.A. (2006). *Confirmatory Factor Analysis for Applied Research*. NY: Guilford Publications, Inc.

Chen, M. F. (2007). Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: Moderating effects of food-related personality traits. *Food Quality and preference*, *18*(7), 1008-1021.

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

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effect of price, brand and store information on buyers' product evaluations. *Journal of Marketing Research*, 28(3), 307-319.

Dominguez, A., Saenz-De-Navarrete, J., De-Marcos, L., FernáNdez-Sanz, L., PagéS, C., & Martínez-HerráIz, J. J. (2013). Gamifying learning experiences: Practical implications and outcomes. *Computers & Education*, *63*, 380-392.

Fornell, C. & Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*. *18(1),* 9-50.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, *8(4),* 597-606.

Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R. E. (2010). *Multivariate Data Analysis*. 7th Edition. Pearson Education. New Jersey.

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. (2013). Social Motivations To Use Gamification: An Empirical Study of Gamifying Exercise. In *ECIS* (p. 105).

Hartmann, P., & Apaolaza-Ibáñez, V. (2012). Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern. *Journal of Business Research*, *65*(9), 1254-1263.

Hsu, C. L., & Lin, J. C. C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management*, *45*(1), 65-74.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural equation modeling: *A Multidisciplinary Journal*, 6(1), 1-55.

Huotari, K., & Hamari, J. (2011). Gamification from the perspective of service marketing. In *Proc. CHI 2011 Workshop Gamification*.

Kelloway, K.E. (1989). *Using Lisrel for Structural Equation Modeling: A Researcher's Guide*, London, Sage.

Kim, J. T., & Lee, W. H. (2015). Dynamical model for gamification of learning (DMGL). *Multimedia Tools and Applications*, *74*(19), 8483-8493.

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

Kotler, P. & Armstrong, G., (2014). *Principles of Marketing*. 15th Edition, Pearson Education, England.

Kotler, P., & Keller K.L., (2014). *Marketing Management*. 14th Edition, Prentice Hall, New Jersey.

Lages, L. F., Jap, S. D., & Griffith, D. A. (2008). The role of past performance in export ventures: A short-term reactive approach, *Journal of International Business Studies*, *39,* 304-325.

Lee, S. A., & Jeong, M. (2014). Enhancing online brand experiences: An application of congruity theory. *International Journal of Hospitality Management*, *40,* 49-58.

Lindell, M.K. & Whitney, D.J. (2001). Accounting for Common Method Variance in Cross-Sectional Research Designs. *Journal of Applied Psychology*. *86(1),* 114-121.

Lu, L. C., Chang, W. P., & Chang, H. H. (2014). Consumer attitudes toward blogger's sponsored recommendations and purchase intention: The effect of sponsorship type, product type, and brand awareness. *Computers in Human Behavior*, *34*, 258-266.

Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management science*, *52(12)*, 1865-1883.

Malhotra, Y., & Galletta, D. F. (1999). Extending the technology acceptance model to account for social influence: Theoretical bases and empirical validation. In *Systems sciences, 1999. HICSS-32. Proceedings of the 32nd annual Hawaii international conference on* (pp. 14-pp). IEEE.

Mangold, W. Glynn, and David J. Faulds, (2009). Social media: The new hybrid element of the promotion mix, *Business horizons*, *52(4)*, 357-365.

Menachemi, N. (2010). Assessing Response Bias in a Web Survey at a University Faculty. *Evaluation & Research in Education*. *24(1)*, 5-15.

O'cass, A., & Fenech, T. (2003). Web retailing adoption: exploring the nature of internet users Web retailing behaviour. *Journal of Retailing and Consumer services*, *10*(2), 81-94.

Podsakoff, P. M., Mackenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879-903.

Salim, M., Javed, N., Sharif, K., & Riaz, A. (2011). Antecedents of knowledge sharing attitude and intentions. *European Journal of Scientific Research*, *56*(1), 44-50.

Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of Human-Computer Studies*, *74*, 14-31.

Simões, J., Redondo, R. D., & Vilas, A. F. (2013). A social gamification framework for a K-6 learning platform. *Computers in Human Behavior*, *29*(2), 345-353.

Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual differences*, *42(5)*, 893-898.

Tabachnick, B.G., & Fidel, L.S. (2001). *Using Multivariate Statistics*, Fourth Edition, MA, Allyn& Bacon Inc.

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications*. American Psychological Association.

Visser, P. S., & Mirabile, R. R. (2004). Attitudes in the social context: the impact of social network composition on individual-level attitude strength. *Journal of personality and social psychology*, *87*(6), 779.

Zichermann, G. (2011). Intrinsic and extrinsic motivation in gamification. *Gamification Summit, San Francisco*, *27*.