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Abstract

As online purchasing grows in importance, the interest of enhancing the online purchasing experience also increases. Although considered as 'a reason to play', gamification is established as a successful set of activities to motivate and engage end-users, consumers, patients and students. However, limited research has been conducted concerning the impact of game elements on s-commerce purchasing behaviour. Hence, this paper aims to investigate the effect of game elements in user behaviour for consumers who purchase via social media with the relationship being moderated by game experience. For hypotheses testing purposes, this study uses PLS-SEM and independent sample t-test to examine 721 questionnaires gathered via an online survey. The findings reveal that game elements positively and significantly influence user behaviour but the relationship is not moderated by game experience. This confirms that gamification is a concept extending beyond games and if designed and applied accurately it may induce dull experiences with fun and joy.

Keywords: Aesthetics, developing countries, MDA Framework, gamification, game experience, game dynamics, game mechanics, social media, s-commerce, purchase

1 Introduction

Selling goods via social media (s-commerce) has received increasing attention due to the benefits of s-commerce as a new revenue model for companies and as a networking medium which facilitates communication with consumers, ensures quicker responding to consumer inquiries, provides appealing information sharing and consumer attraction techniques, and increases the possibilities for becoming an international company. This description is undeniably true. The majority of s-commerce

users consider s-commerce as an influencer of purchasing decision due to its easy accessibility, time saver function, information abundance, and credibility (**Jashari and Rrustemi, 2017**). According to the Kosovo Agency of Statistics reports (**Deliu et al., 2018, 2019**), the number of internet users in the Republic of Kosovo (hereinafter: Kosovo) increased from 82.9% to 93.2% during 2018. Moreover, the use of the internet for online purchasing, public services and the processing of their inquiries in general has increased to 4.4% compared with the internet use for the same purpose during 2017. The same trend has been followed in the Republic of Albania (hereinafter: Albania) as well. According to Internet World Stats (2018) the internet penetration rate has reached above 2 million Internet users. Regarding the reason of internet usage in Albania, 59% use Internet for social networks (**IDRA Research & Consulting, 2019**). This gradual annual rise of internet penetration is naturally prone to receive attention from companies and researchers alike.

Games have been used as a form of relaxation during leisure time. In addition to entertainment, games may be employed to motivate players towards certain behaviours. While utilitarian games are employed to arouse the sense of usefulness in players, hedonic games are played to satisfy the need for pleasant sensations within the player (**Hamari and Keronen, 2017**). Considering the impact of similar games on player behaviour, the importance of applying game elements in a non-game environment is significant. However, gamification is considered as a broader concept than games. Moreover, the application of gamification in retail industry is expected to upgrade the competition level between companies through enhancing consumer purchasing experience with delight and satisfaction while focusing less in pricing and heavy promotional strategy (**Insley and Nunan, 2014**).

Due to lack of research regarding the impact of game elements on online purchasing and the linkage of game elements with game experience, this research aims to investigate the influence of the game elements on the user behaviour of consumers who purchase via s-commerce with the relationship being moderated by game experience. Even though it has previously been suggested by **Vashisht and Sreejesh (2016)** to investigate the game experience impact in a gamified environment, so far researchers have focused on the impact of games on improving performance, motivation, socialisation, and behavioural changing (**Hsiao and Chiou, 2012; Teng and Chen, 2014; Chou and Wang, 2016**). Therefore, the contribution of this research is manifold. Initially, it investigates the impact of game elements on user behaviour for consumers who purchase via s-commerce. In addition, it explores the influence of game experience on the relationship between game elements and user behaviour. For research purposes, game elements have been designed based on the MDA (acronym for mechanics, dynamics, and aesthetics) Framework (**Kim and Lee, 2015**) due to the fact that key gamification elements are established referring to the mentioned framework. Although the most frequent studied game elements are points, rewards and leaderboards, this study goes beyond by exploring additional game elements. Furthermore, each construct was investigated based on the structural model in respect of the relationship significance. The importance of the current research lies in filling the gap, as so far the MDA Framework has only been studied in terms of gamification strategy design, implementation, management and optimisation of gamification strategy. Management, education, business, music industry, innovation, behavioural change, and health are few of the fields where game elements have been considered (**Robson et al., 2015; Chang and Wei, 2016; Lopez and Tucker, 2017**). To the authors' knowledge, this is the first time that the MDA Framework has been applied in combination with the game experience in a study of s-commerce purchasing, supported by data from Western Balkan countries.

2 Literature review

Consumer engagement and motivation are challenging for companies. Generally, purchasing via s-commerce seems to facilitate the purchasing process for s-commerce users (**Yahia et al., 2018**). However, a prior study indicated that the decision making process is similar regardless of purchasing means, offline or online (**Jankowski et al., 2016**). Moreover, suggestions and collaborative browsing induce a preferable online shopping experience followed with a notably psychological companionship (**Wei et al., 2017**). In addition to the experience, the consumer-to-consumer communication fosters the relationship between them and effects on consumer persuasion (**Dong and Li, 2018**). However, previous research work conducted has identified several factors which influence the users' purchasing behaviour. **Yahia et al. (2018)** point out that perceived easiness of usage of s-commerce, facilitating conditions, hedonic motivation and habits intensify the commitment to purchase via s-commerce. According to **Internet World Stats (2018)** the most used platforms are Facebook and Instagram. Regarding the dissimilarities between platforms, researchers have identified several factors influencing consumer purchasing decisions. When purchasing, Facebook users are influenced by the usefulness, social influence and the feeling evoked by the usage of the platforms (**González et al., 2015**). On the other hand, Instagram users consider perceived hedonism, satisfaction and intention to interact in Instagram as the factors influencing purchasing behaviour (**Casaló et al., 2017**).

Gamification is considered as a set of activities of motivating and engaging consumers, end-users, students, patients, and participants by employing game elements. According to **Werbach and Hunter (2012)**, gamification is described as a process that adds game elements in a non-gaming environment. Furthermore, the authors classify gamification into four categories: internal (enterprise gamification), external, behaviour change (enterprise program) and behaviour change (individual). Following the definitions of each category, this research addresses the external gamification category considering that the research investigates the customers' behaviour and its aim is to provide information regarding the impact of game elements on the relationship of customers with companies in terms of engagement and motivation when purchasing from social media retail businesses. Applying game elements in a non-gaming context aims to induce the same feeling and attachment evoked while playing games. Presumably, the existence of various types of games leads to diverse results, reasoning of usage and implications. The intention to use is not perceived homogeneously across gamification, serious games, social games, simulation games, and games-for-a-purpose. Gamification along with engagement intention is positively allied with brand and consumer engagement (**Harwood and Garry, 2015; Hogberg et al., 2019**). Furthermore, game elements which promote hope are expected to strengthen customer engagement and increase sales (Eisingerich et al., 2019). Concerning the impact of game elements on the purchasing process, this study has employed the MDA framework (**Kim and Lee, 2015**) due to the fact that key gamification elements are built based on the same framework. Concerning game elements diversification, the frequency of expressions such as game mechanics, game dynamics and aesthetics appeared to be high. Moreover, the successful application of game elements has yielded remarkable results in numerous disciplines.

Aesthetics is described in the game terminology as the emotional part of the game. The emotional element is expected to induce in the player a diversified set of emotions while playing (**Robson et al., 2015**). Furthermore, aesthetics affected TAM antecedents, perceived usefulness, ease of use, and enjoyment, designed to impact on user loyalty (Cyr et al., 2006). The enjoyment, specifically mental stimulation, of mobile marketing games resulted to be influenced by the combination of surface gesture and product picture. Furthermore, the enjoyment evoked by perceived control resulted to be affected by a combination of motion gesture and reward uncertainty (**Xi et al., 2019**). Curiosity as one

of the aesthetics elements added in gamified classes improved the results of the learning process (**Kim and Lee, 2015**). However, limited research has been conducted thus far concerning the impact of aesthetics on user behaviour. Therefore, the following hypothesis has been set:

Hypothesis 1 (H1) Aesthetics positively affect user behaviour.

Game dynamics are described as the set of rules which provide information regarding the communication between the player and the game (**Zichermann and Cunningham, 2011; Thiebes et al., 2014**). Achievement as one of the game dynamics elements resulted to be positively linked with intrinsic need satisfaction, indicating that achievements may be considered as essential elements towards need satisfaction by gamified services (**Xi and Hamari, 2019**). Furthermore, concerning the game dynamics elements of competition and cooperation, according to **Morschheuser et al. (2019)** the inter-team competition presumably will lead to great enjoyment, participation and readiness to recommend. In order to increase the chances of recommendation, gamification designers are advised to highly focus on cooperation rather than competition. Concerning game dynamics, the results reveal that the feeling of belonging, advancement and expressiveness induced while purchasing in a gamified setting have been identified as differences between Facebook and Instagram (**Haziri et al., 2019**b). Due to limited research conducted regarding the impact of game dynamics on user behaviour, the following hypothesis has been designed:

Hypothesis 2 (H2) Game dynamics positively affect user behaviour.

Game mechanics in the game terminology are described as a group of means utilised to encourage the player to react while playing games (**Zichermann and Cunningham, 2011**) and to display the difficulty level within the game (**Kim and Lee, 2015**). One of game mechanics elements is reward, which influenced the improvement of video game players' task performance and declarative memory tasks. The results suggested that playing games may have an impact on the part of the brain associated with memory, emotions, and motivation (**Prena et al., 2018**). Additionally, rewards resulted to influence the intrinsic motivation loyalty program, but receiving a salient controlled reward had a lower impact compared to a non-salient reward (**Kim and Ahn, 2017**). Gamified mobile apps which use badges resulted to evoke higher consumer satisfaction (**Love et al., 2016**). Furthermore, **Hamari and Lehdonvirta (2010)** suggested that game elements which can be used to induce repeated purchase are item degradation, inconvenient gameplay elements, currency as a medium, avatars, special occasions, artificial scarcity and alternatives to existing content. In addition to repeated purchase, consumers were more likely and willing to pay more when it came to items for which they obtained points and currency. **Oh and Ryu (2007)** suggested that items which include game elements and are in bundle packages might increase sales. Moreover, game mechanics influenced engagement, motion, flow and emotions recognised as cognitive and affective responses which undoubtedly affect short and long term marketing outcomes in a servicescape context (**Helmefalk and Marcusson, 2019**). Considering the impact of game elements on different situations and due to lack of empirical data regarding the influence of game elements on user behaviour, the following hypothesis has been designed:

Hypothesis 3 (H3) Game mechanics positively affect user behaviour.

Game experience refers to the game playing experience regardless of the game type. In literature games are described as a beneficial means to induce a joyful experience by engaging players within the game (**McGonigal, 2011**). Nonetheless, the game industry and games in general are not only considered as a means of leisure, but also of engagement and motivation towards desirable behaviour. The Marxist theory explains computer games as a technology manifestation where players aim to create a better reality according to their preferences (**Kirkpatrick et al., 2016**) and the factors determining whether to play or not include the players's video game habits, the likelihood of addiction

and their intentions (**Hartmannet al., 2012**). Furthermore, numerous games offer items to purchase within the game besides playing. Purchasing game items online appeared to be influenced by psychological factors which later are expected to be evoked throughout the game player behaviour. Namely, psychological engagement is expected to mirror the player's behavioural engagement status (**Cheung et al., 2015**). Moreover, games resulted to influence behavioural actions as well. **Lopez and Tucker (2017)** emphasised that the game influence in task performance is positively linked with the physical effort required to complete a task. Additionally, game components such as points and avatar resulted to positively influence performance and negatively impact indirect tasks which are a result of the content unlocking component. Also, video game based instruction was shown to have a significant impact on Iranian vocabulary retention (**Salehi, 2017**).

In-game purchasing has received considerable attention due to its influence on customer spending and motivation factors impacting selling in-game content. A study by **Park and Lee (2011)** revealed that loyal players ranked visual authority value and monetary value as the crucial factors towards purchasing game items. Furthermore, game challenges, in-game flow, and player personality are aligned with the game experience (**Alexiou and Schippers, 2018**). According to **Hamari et al. (2017)**, the motivational factors of in-game purchasing may be labelled as unobstructed play, social interaction, competition, rationale, indulging the children and unlocking content. Comparison of the impact of different factors on the amount of money spent on in-game content showed that unobstructed play, social interaction, and economic rationale had a significant effect. **Jimenez et al. (2019)** emphasised that hedonic, social and mainly addiction are motivators which impact the purchase intention of game-related products. Moreover, the purchase intention of players who use Facebook to play games is boosted by player flow experience and price perception (**Liu and Shiue, 2014**). Similar results have been identified regarding loyalty to mobile games and price which remarkably affect the players' intention to purchase via mobile applications. Playfulness, connectedness, flexibility and reward positively impact the player loyalty, although the impact of such factors on non-players is lower (**Hsiao and Chen, 2016**). Although game experience is not studied, attractive social network gamified settings were shown to impact consumer satisfaction and perception of services quality (**Liu et al., 2016**). Experienced players revealed higher intention to purchase gamified products and the purchasing intention prognosticate was influenced by attitudes and perceived usefulness (**Bittner and Schipper, 2014**). Hence, mindful of the impact of game experience in different domains and the lack of empirical research regarding game experience as moderator, the following hypothesis has been designed:

Hypothesis 4 (H4) Game experience moderates the relationship between game elements and user behaviour.

Considering the fact that two countries are part of this study and the authors' interest is to point out the dissimilarities between two Western Balkan countries, the following hypothesis has been set:

Hypothesis 5 (H5) The differences between Kosovar and Albanian consumers regarding game elements are significant.

3 Data collection, procedures and research methodology

The research methodology was composed of three segments. The first segment was data gathering where a questionnaire was distributed online via social media. In order to fulfil the aim and provide an answer regarding what is the effect of game elements on user behaviour with the relationship being moderated by the game experience, the survey was chosen as the most convenient research design.

Furthermore, the questionnaire has been chosen as the data collection tool because it is relatively simple to explain and understand. Also, it enables to gather a large amount of data from a considerable population in a satisfactory cost-effective fashion (**Saunders et al., 2012**). The questionnaire was composed of three sets of five statements. The main elements for each statement were inspired by the MDA framework (**Kim and Lee, 2015**) constructs. The game elements employed by s-commerce retailers from each construct have been included in the research indicators. Each statement employed a Likert scale (1 = totally disagree to 5 = totally agree) to measure the participants' level of agreement. Two closed-ended questions regarding game experience and purchasing frequency were part of the questionnaire as well. The respondents were asked, 'Do you play games (video games, computer games, puzzles, and/or any other game)?' where respondents were also advised to choose 'yes' if they played in the past but not that often in the last few weeks. The second question was modified from **Baptista and Oliveira (2017)** and it was formulated as follows: 'I bought via social media:' and respondents could choose "only once, twice, three times, more than three times, every season, every month, every week, every day.' The questionnaire statements and constructs are depicted in **Table 1**. Furthermore, the questionnaire was distributed in all cities of Kosovo and Albania in order to be able to generalise the results. To be part of the sample, participants had to have purchased previously via s-commerce at least once. The sampling technique used for this research was the convenience sampling technique due to the fact that the study focuses only on the behaviour of s-commerce purchasers. Regarding the demographic distribution of population and the sample design, the authors referred to reports of the Kosovo Agency of Statistics (**Krasniqi et al., 2018**) and **Albania Institute of Statistics (2019)**. After data gathering, 721 valid questionnaires from Kosovo and Albania were used for further analysis. Previously a pilot test with 50 respondents from each country was conducted. The results of the pilot test supported the reliability and validity of the proportions which enabled to continue further with the data collection. The data have been analysed using SmartPLS version 3.0 and SPSS version 23.

In the second segment, the techniques, procedures, methods, and statistical tests were chosen to analyse the gathered data. The deductive procedure has been followed for this research. Initially, articles related to the game experience and game elements from Scopus and Web of Science were collected. Literature review informed the definition of the gap, which lead to problem formulation, namely the study started from the theoretical knowledge at disposal. Afterwards, the questionnaire was designed and distributed. The data were analysed using several statistical tests and it resulted that PLS-SEM and independent sample t-test are the most appropriate to fulfil the aim of the research. Reasoning is that PLS-SEM allows examining complex models with numerous structural model relations, it enables the measurement of constructs regardless of the number of items, and no distributional assumptions is needed (**Hair et al., 2017**).

Numerous scholars have employed PLS-SEM to examine the game experience influence on loyalty toward online games (Suki and Suki, 2017), game experience impact on brand trust, brand image and eWOM (**Liao et al., 2013**), factors which impact user behaviour (**Baptista and Oliveira, 2017**) and purchasing intention towards gamified products (**Jimenez et al., 2019**). The standard procedures described by **Vinzi et al. (2010)** and **Hair et al. (2017)** were considered. The model was created first, followed by the path modelling creation and calculation. Additionally, independent sample t-test was chosen as the statistical technique to analyse the data in order to identify the statistically significant differences between Kosovar and Albanian consumers.

Table 1 Constructs and survey statements

Constructs	*Item*	*Survey statement*	*Source*
Game mechanics (GM)	GM01	By buying via social media, I am able to obtain points, badges, and leader-boards	Haziri and Chovancova (2018)
	GM02	The benefits received for buying via social media are thrilling	
	GM03	Purchasing via social media helps me forget unpleasant events and makes me feel better than others	
	GM04	I felt motivated by the rewards, points and badges offered by sellers	
	GM05	Social media make shopping a fun and enjoyable process	
Dynamics (DY)	DY01	I felt like I am making a big step in my life while shopping via social media	Haziri et al. (2019b)
	DY02	It's important to see a high number of consumers wanting the same products as I	
	DY03	I felt like I have reached a high social status while I am shopping via social media	
	DY04	Shopping via social media allows me to deplete my creativity	
	DY05	I consider shopping via social media as a personalised and individual process	
Aesthetics (AS)	AS01	I get very emotional regarding the way I interact with everything while shopping via social media	Haziri et al. (2019a)
	AS02	I felt like I was discovering a totally new world while purchasing via social media	
	AS03	Satisfaction and delight are the words to describe my experience when shopping online	
	AS04	Buying online stimulates my fantasy	
	AS05	The bond I feel with the products/items/goods presented in social media is strong	
User behaviour (UB)	UB01	I bought products via social media: a) Only once b) Twice c) Three times d) More than three times e) Every season f) Every month g) Every week h) Every day.	Adopted from Baptista and Oliveira (2017)
Game experience (GE	GE	Do you play games (video games, computer games, puzzles, any other game): a) Yes b) No	

The criteria to perform the independent sample t-test have been fulfilled (**Pallant, 2016**). One categorical, independent variable and one continuous, dependent variable were part of the test. The results presenting significant differences between the groups are depicted in the column named as p-value for independent sample t-test in Table 5. Furthermore, a 95% confidence interval of the difference has been used to perform the test.

The third segment consisted of designing and creating the model which is explained in details in the following section. The MDA framework was used as inspiration in constructing the model. Afterwards, game experience and user behaviour were added in order to reach the research aim. Hypotheses and the research in general were designed following the model.

4 Results and discussion

For research purposes, PLS-SEM was employed due to its aim which is to evaluate the variance of the internal cause of constructs and their corresponding manifest variables in turn (**Vinzi et al., 2010**), that subsequently aligns with the goal of this study. Along with PLS-SEM, the independent sample t-test was employed to distinguish the dissimilarities based in the mean scores for different (independent) groups (**Pallant, 2016**). Firstly, the structural model was designed to assist in the representation of the constructs in defining the variables and their relationship. Secondly, the measurement model of the constructs was calculated in order to demonstrate the relationships between the constructs and indicated variables (**Hair et al., 2017**).

4.1 Measurement model

The summary of the results of the measurement model for both countries is shown in **Table 2, 3 and 4**. The frequency of two closed-ended questions for Kosovo s-commerce purchasers shows that 51% of respondents had played and continued to play different games and 49% did not play games (SD = .501, σ^2 = .251, $\overline{x}$ = .49).

Concerning the purchasing frequency of Kosovar respondents, 8.6% of respondents had purchased only once, followed by 10.6% who had purchased twice, 10.2% who had purchased three times, while the majority of the respondents purchased more than three times (51.8%), with comparatively less s-commerce users who purchased every season (5.5%), every month (11.8%) and every week (1.6%). On the other hand, regarding the distribution of Albanian s-commerce purchasers, 76.6% had played and continued to play games, while 23.4% never played games (SD = .424, σ^2 = .180, $\overline{x}$ = .23). Regarding purchasing frequency, 9.9% of respondents purchased only once and every season, 9.4% of respondents purchased twice and three times via s-commerce, the greater part (45.5%) of respondents had purchased more than three times compared with the rest of respondents who purchased less often such as monthly (10.5%) and weekly (2.4%). Additional information regarding the sample profile for both countries is depicted in **Table 2**.

Table 2 Sample profile (N = 721)

Category	*Sub-category*	*Kosovo*		*Albania*	
		n	*%*	*n*	*%*
Age	Less than 20	12	4.7	235	50.4
	21–40	219	85.9	213	45.7
	41–60	22	8.6	18	3.9
	More than 61	2	.8	–	–
Gender	Female	160	62.7	319	68.5
	Male	95	37.3	147	31.5
Occupation	Employed	162	63.5	183	39.3
	Unemployed	93	36.5	283	60.7
Education	No education	–	–	1	.2
	Primary school	–	–	5	1.1
	High school	12	4.7	122	26.2
	Bachelor	127	49.8	227	48.7
	Master	107	42	99	21.2
	More than master	9	3.5	12	2.6

Table 3 presents the item loading, the Cronbach's alpha coefficients, composite reliability, and average variance extracted (AVE). Due to low loading, two items, one for each country, of game dynamics have been removed. The Cronbach's alpha (for Kosovo: .93, .86, .84, 1.0, 1.0 and for Albania: .83, .80, .89, 1.0, 1.0) are above the minimum requirements of .70 which may be considered as satisfactory. Furthermore, the composite reliability of constructs fluctuates from 1.0 to .94, which overreached the minimum criteria of .60. Eventually, the constructs revealed satisfactory convergence reliability.

Game mechanics resulted to obtain an average variance extracted (AVE) of .78 = Kosovo and .60 = Albania; game dynamics .71 = Kosovo and .62 = Albania; aesthetics is |.61 = Kosovo and .69 = Albania; game experience and user behaviour share the equal AVE of 1.0; which is higher than the minimum criteria of .50, indicating that AVE value explains more than half of the variance of its indicators, namely demonstrates sufficient convergent validity.

The output of discriminant validity for Kosovo and Albania based on Fornell-Larcker Criterion is presented in **Table 4**. According to Fornell and Larcker (1981), investigation if AVE square root transcends the constructs showed that intern-correlation constructs have discriminant validity. Therefore, the results shown in **Table 4** indicate that the criteria are fulfilled and constructs have discriminant validity.

Table 3 Summary of constructs reliability and validity results

Constructs	Loading		CA		CR		AVE	
	XK	AL	XK	AL	XK	AL	XK	AL
Game mechanics (GM)	.72	.80	.93	.83	.94	.88	.78	.60
	.77	.79						
	.80	.71						
	.81	.77						
	.81	.78						
Game dynamics (DY)	.83	.82	.86	.80	.91	.87	.71	.62
	–	.70						
	.87	.82						
	.94	.81						
	.72	–						
Aesthetics (AS)	.78	.80	.84	.89	.89	.91	.61	.69
	.89	.84						
	.90	.86						
	.95	.84						
	.88	.82						
Game experience (GE)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
User behaviour (UB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Notes: AL = Albania, XK = Kosovo, CA = Cronbach's alpha and CR = composite reliability.

Table 4 Summary of discriminant validity for Kosovo and Albania

Constructs	AS		DY		GM		GE		UB	
	XK	AL	XK	AL	XK	AL	XK	AL	XK	AL
AS	.88	.83								
DY	.77	.72	.85	.79						
GM	.68	.63	.68	.61	.78	.77				
GE	–.05	–.05	–.08	–.07	–.04	–.11	1.00	1.00		
UB	.18	.18	.14	.24	.12	.26	–.05	–.07	1.00	1.00

Note: XK = Kosovo and AL = Albania.

4.2 Structural model

The results of the measurement model confirmed the reliability and validity of the data, hence allowing continuing with the structural model and hypotheses relationship investigation. The evaluation of the structural model is depicted in Table 5. Furthermore, the model constructs for hypotheses testing have been displayed in **Figure 1**. The model evaluation has been performed for each country separately due to significant differences identified. The impact of game elements and game experience as a moderator in purchasing frequency are described along with the structural model evaluation. Additionally, the significance level was .05 and the test type was two-tailed.

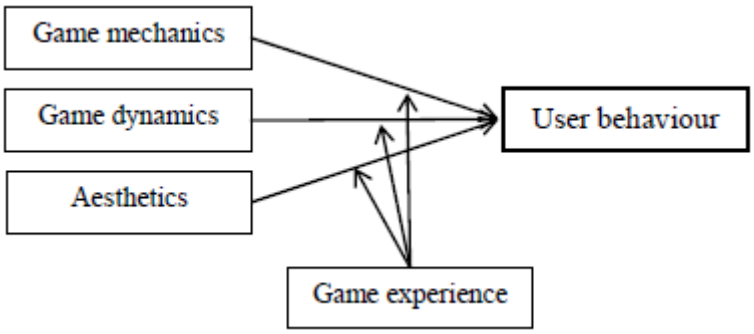

Figure 1 The model constructs for hypothesis testing

Aesthetics positively affected (β = .19) user behaviour of respondents from Kosovo who purchased via s-commerce at least once and the relationship is significant (p = .02), thus H1 is supported. Similar results have been provided by Cyr et al. (2006), confirming the positive impact of aesthetics. Conversely, aesthetics negatively affect (β = -.06) user behaviour for respondents from Albania who purchased via s-commerce and the relationship is insignificant (p = .35), namely, no evidence was found to support H1 for Albanian consumers.

The other game element, game dynamics, positively affects (Kosovo: β = .002 and Albania: β = .16) user behaviour of s-commerce purchasers and the relationship is significant (p = .00) for Albanians but insignificant (p = .95) for Kosovars. Thus, H2 is rejected for Kosovars but supported for Albanians. The results show that game dynamics aim confirmation, as suggested by **Thiebes et al. (2014)** and are expected to motivate, entertain and evoke emotion when purchasing via s-commerce (**González et al., 2015; Casaló et al., 2017**).

The last game element of the model, game mechanics, has shown to have a negative impact (β = -.01) on user behaviour of experienced Kosovars s-commerce purchasers and the relationship is insignificant (p = .69), therefore H3 is not supported. On the other hand, game mechanics positively affect (β = .20) Albanians user behaviour of s-commerce buyers and the relationship is significant (p = .00), thus supporting H3 for Albanians. The results are in the same line with the previous research work conducted by **Hamari and Lehdonvirta (2010)** where game mechanics impacted purchasing frequency. Furthermore, similar results have been acknowledged in the educational domain as well where the significant impact of leaderboards, points, badges and rewards has been confirmed (**Aldemir et al., 2018**). Game mechanics also had a positive impact on players' performance (**Lopez and Tucker, 2017; Prena et al., 2018**).

Game experience as a moderator of the relationship between game elements and user behaviour resulted insignificant, thus H4 was not supported due to lack of evidence. Regarding the path sign, the moderated relationship of game aesthetics with user behaviour for Albanians resulted to be negatively affected (β = -.06) and the relationship is insignificant (p = .37). However, the moderated relationship of game aesthetics with user behaviour for Kosovars s-commerce purchasers resulted to be positively affected (P = .12) and insignificant (p = .19). The moderated relationship of game dynamics (β = -.03) and game mechanics (β = -.14) with user behaviour of Kosovars s-commerce purchasers resulted to be negatively impacted and the relationship insignificant (p > .05).

Table 5 Structural model evaluation for Kosovo and Albania

Constructs	*Path*	*SE*		*t-value*		*p-value*		*IS t-test*	
		XK	*AL*	*XK*	*AL*	*XK*	*AL*	*MD*	*p-value*
AS	AS→UB	.19	–.06	2.07	.94	.02	.35	–.29	.00
	AS*GE→UB	.12	–.06	1.30	.89	.19	.37		
DY	DY → UB	.002	.16	.02	2.65	.95	.00	–19	.00
	DY*GE→UB	–.03	.03	.38	.42	.70	.67		
GM	GM → UB	–.01	.20	.14	3.46	.69	.00	.38	.01
	GM*GE→UB	–.14	.004	1.6	.06	.11	.95		

Note: AL = Albania, XK = Kosovo, SE = standardised estimate, IS = independent sample and MD = mean difference.

On the other hand, although for Albanians s-commerce purchasers the moderated relationship of game dynamics (P = .03) and game mechanics (β = .004) with user behaviour resulted to be positively affected, the relationship was insignificant (p > .05). The results are in the same line with the previous research conducted by **Dardis et al. (2015)** where game-playing experience unanticipated the prediction of behaviour changes towards purchasing intention. They also echo the research work conducted by **Denden et al. (2018)** and **Ilott et al. (2014)**, where the game playing frequency unaffected the perception of gamification. Contrarily, the results contradict the research work where game experienced American learners performed better (**Landers and Armstrong, 2017**) and game experienced Belgians and Dutch consumers retained greater purchase intention towards gamified products (**Bittner and Schipper, 2014**). Also, **Ravoniarison and Benito (2019)** concluded that progressing within the game stimulates the willingness to upgrade in-app purchasing, hence the game success is expected to impact the in-app purchasing decision.

The results of the independent sample t-test provided information regarding the significant differences (p < .05) between Albanians and Kosovars across all game elements. Therefore, H5 is supported due to the statistical differences identified.

The authors aimed to investigate the impact of game elements on user behaviour and examine whether the relationship is moderated by game experience. Although game elements positively affect user behaviour, the relationship is not moderated by game experience. The differences between consumers in Kosovo and Albania are that Kosovars consumers are motivated and engaged by emotional game elements and Albanians consumers are motivated and engaged by the communication and the encouraging tools game elements. The differences are confirmed by independent sample t-test as well. In the early 2003, gamification was considered as a buzzword and a reason to play video games (Chou, 2016) but the results of this study reveal that gamification is a concept beyond games and prior game playing experience does not moderate the impact on purchasing behaviour. Also, the poor gamified design provided by retail companies with 80% of gamified services, products and apps failing to reach its aim due to inappropriate strategy (**Thiebes et al., 2014**) and careless management (Insley and Nunan, 2014) are noteworthy. The appropriate design and appliance of game elements resulted to be crucial. Followed with personality, characteristics, cultural background and other attributes of participants or members in the gamified environment, the mentioned factors resulted to be important in such setting and adjusting them may to be the direct path to success. Moreover, player experience and player personality were imbalanced, thus their consideration was futile when designing and predicting preferences for game mechanics (**Ferro, 2018**). The gamified environment tends to influence user experience by utilitarian and hedonic features. Such

influence is expected to reflect in perceived benefits, types of perceived value, and brand equity (**Hsu and Chen, 2018**) whereas in developing countries price is an extraordinarily important factor when purchasing (**Al Hawary and Harahsheh, 2014**). Hence, consumers in developing countries are sensitive to prices rather than brand equity. In major developing countries price has a significant impact on purchase decisions. Accordingly, the price reduction and post-sales service advertising are considered as determinant factors towards online purchase behaviour in developing countries (**Ekpe et al., 2016**).

5 Conclusions and recommendation

Game elements provide useful information regarding the behavioural changes with respect to motivation and engagement. Due to players' arousal with commitment, joy and delight while playing, scholars, companies, teachers, professors, trainers and numerous different domains are exploring game elements to evoke those feelings in the consumers, students, participants, and end-users. Considering that s-commerce is used by numberless users for shopping purpose or booking vacations, it is worthwhile to investigate consumer engagement and motivation towards purchasing decision and purchasing intention. Following the mentioned trends, the results of this study revealed that game elements positively affect user behaviour of s-commerce purchasers. Additionally, the relationship between game elements and user behaviour resulted unaffected by the moderator game experience.

This study built on the MDA Framework was conducted to examine the impact of game elements on user behaviour with the relationship being moderated by game experience. Literature review helped identify the theoretical and practical gap, which then lead to model construct, research, and methodology design. The model, the data analysis methods and statistical test lead to the conclusion that aesthetics positively and significantly impact user behaviour of Kosovars s-commerce purchasers, but the relationship between game aesthetics and user behaviour is not moderated by game experience. On the other hand, game dynamics and game mechanics positively and significantly influence Albanians user behaviour when purchasing via s-commerce, but the relationships between game dynamics, game mechanics and user behaviour are not moderated by game experience. The differences between consumers in Kosovo and Albania are statistically confirmed. Kosovar consumers are motivated and engaged by emotional game elements, while Albanian consumers are motivated and engaged by the communicative and the encouraging tools of game elements.

The findings of this research may be used as a foundation for further study into the consumer behaviour domain when game elements and game experience are considered. The present study contributed to and advanced the theoretical and practical understanding of the gamification and the impact of game elements on s-commerce user behaviour in developing countries. Additionally, by investigating the game experience moderating impact on the relationship between game elements and user behaviour, this study also contributed to improving the understanding of game elements and their relationship with game experience. The authors aimed to dwindle the gap by providing information regarding the influence of game mechanics, dynamics and aesthetics on user behaviour and the game experience moderating impact on the relationship between game elements for consumers in developing countries, respectively Kosovar and Albanian consumers who purchase via s-commerce. Briefly, the study provides important insights into the moderating impact of game experience which is related to game elements and simultaneously reveals stimulating results for scholars in the field of gamification, game elements, consumer behaviour, and online purchasing. The contribution lies in the confirmation of the positive impact of game elements independently from the game playing experience. To the authors' knowledge, the present study is one of the first in the area

of consumer behaviour employing gamified content and mathematical methods, including PLS-SEM to online shopping behaviour.

6 Limitations and future work

This study, like any other, has several limitations that invite researchers for further examination and investigation. With regards to the sample used in this research, it can be concluded that it is biased due to the fact that only s-commerce users who had purchased via s-commerce were part of this study, excluding consumers who purchase offline, via m-commerce and e-commerce. The respondents were only Albanian speakers from two Balkan countries - Kosovo and Albania, hence it is inadvisable to generalise the data for all Balkan countries or developing countries, although the findings of this research can be generalised to countries who share similarities with Kosovo and Albania in terms of regional, economic, institutional, political and terminological advancement with developing countries. In addition, no comparison has been conducted of online and offline purchasing behaviour within Kosovar and Albanian consumers or with other countries. Thus, further research could be carried out in other countries and the results are subjected to comparison. Additional moderators could be added due to the fact that game design, personality, characteristics, cultural background and other attributes of the participants are an important caveat. Furthermore, different game elements could be employed to extend and modify the model construct. The present study did not investigate the relationship of game type and game elements or the length of time spent playing, which allow researchers to further explore in this direction. As mentioned by Ferro (2018), investigating the player personality to predict purchasing behaviour could also be a fruitful direction for future research. Not every consumer is motivated by the same technique or factors and, in a similar vein, players are not motivated in the same manner, so a comparison between playing motivational factors and purchasing motivational factors in a gamified environment may provide interesting results. Lastly, for researchers, this study can be used as a basis for further refinement of individuals and for further research regarding gamification and online purchasing behaviour. For practitioners, understanding the basic constructs is essential to design and implement game elements to boost consumer purchasing experience with joy and delight with the correct application of game technique.

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