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IMPLEMENTATION OF THE GAME AS A SERVICE RESEARCH MODEL: MICROPERSPECTIVE

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Abstract: From a negligible market niche in the entertainment industry, video game publishing has become extremely profitable. The emergence of the video game digital distribution platforms has established a permanent connection between the player and the publisher, making it possible to expand the offer. This led to emergance of the game as a service model, based on a continuous flow of revenue from the sale of additional content in an already distributed game. Revenues generated from the sale of virtual goods within the game are called microtransactions. The subject of this paper is the attitudes of video game players in Serbia and Poland towards different types of microtransactions. The paper has two key objectives: first, to determine whether there are differences in attitudes towards different types of microtransactions, and, second, to determine whether there are differences in attitudes of gamers from Serbia and Poland. In order to achieve these objectives, gamers are given a questionnaire to express their views regarding microtransactions. The existence of statistically significant differences in the attitudes of gamers classified in these two samples is determined for all observed forms of microtransactions, using the t-test.

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Introduction

The video game industry has been growing for almost four decades. From a negligible niche market in the entertainment industry, publishing video games has become extremely profitable. Annual revenue from video game publishing in 2019 was 145.7 billion US dollars, compared to 42.5 billion of film industry revenue or 20.2 billion of music industry revenue (Richter, 2020). From cheap entertainment that mostly attracted young unemployed men, video games have turned into a prestigious and competitive activity, which both old and young individuals of both sexes practice alike. The rising demand for video games has come hand in hand with therise in supply both in terms of the number of titles and in terms of genres. The last decade has brought the third segment of the video game market, because in addition to PC games and games for consoles, more and more titles are being released for mobile phones. Mobile video games in particular are the biggest driver of revenue growth. Increasing the offer and creating a new market segment enabled the development of alternative models of game sales.

The traditional approach to publishing video games involved selling full content at a premium price. Players used to buy games in video game stores or order them from publishers' or distributors'catalogues. The act of purchase was the player's only link to the distributor/publisher. Rise in the Internet data transferspeed has created conditions for the digital distribution of games when shopping through a service such as Steam. The existence of digital distribution platformshas established a permanent connection between the player and the publisher, thus making it possible to expand the offer. A game as a service (GAAS) model has been created, based on a continuous flow of revenue (Lehdonvirta, 2009). GAAS is based on virtual goods that are sold as additional content to an already distributed game. This means that GAAS allows for in-game purchases, called microtransactions, where in some cases there is virtually no upper limit on potential revenue.

Some authors define microtransactions as low-value payments for content expansion in existing video games (Evers et al., 2015). However, although additional content purchased is often trivial compared to the content of the entire game, the cost of microtransactions is often not negligible. In fact, a very small number of microtransactions correspond to the category of micropayments (Tomić, 2020, p. 150). For example, research has shown that players who pay for microtransactions in the League of Legends video game spend 92 dollars a year, which is 50% more than the expected premium price of the most popular video games in 2021 (Gough, 2020).

Gamers' attitudes often vary depending on the type of microtransactions. In multiplayer games on the Internet, gamers generally oppose any payment that changes the game balance. On the other hand, it is considered that gamers have nothing against microtransactions in which the subject of trade is of a cosmetic nature. The subject of this paper is the attitudes of video game players in Serbia and

Poland towards different types of microtransactions. The paper has two key objectives: first, to determine whether there are differences in attitudes towards different types of microtransactions, and, second, to determine whether there are differences in the attitudes of gamers from Serbia and gamers from Poland.

The paper consists of four parts. The first part explains the forms of microtransactions that will be the subject of analysis. The second part reviews the literature, with the aim of finding similar research to help formulate the model. In the third part of the paper, a research model is constructed and hypotheses set, so that the fourth part of the paper reviews the results achieved.

1. Forms of microtransactions

Video game publishers have alternative forms of microtransactions at disposal. Depending on the genre and size of the game, microtransactions can appear as an additional source of income after the sale of the game at a premium price, or even as the sole source of income. Making video games for computers and gaming consoles usually requires a much higher budget than making mobile games. Therefore, such games are usually sold at premium price, after which subsequent content is offered in the form of microtransactions. In addition, certain game genres are more conducive to a particular form of microtransaction.

Downloadable content (DLC) is the oldest form of microtransaction. It is inherent in computer games, but it can certainly be applied in the mobile games. It involves additional content that expands an already released video game, whether those changes are cosmetic in nature (alternative look or new costume for existing characters) or change the gaming experience (new playable characters in shooting games or role-playing games (RPG), new fractions and maps in strategy games, new missions in multiplayer games (genres known as MMORPG and MOBA), and the like). Cosmetic changes are common in mobile games and their main feature is that they do not change the essence of the gaming experience and the existing balance of the game (Zendle et al., 2020a). Additional content is often combined into an expansion pack, or seasonal pass for multiplayer games online, for easier sales. Before the advent of broadband, expansion packs were sold as an additional CD, the installation of which upgraded the existing game. For example, in late 20th century, Microsoft released additional contentfor the *Age of Empires*, a very popular strategy game, and named it*Rise of Rome*. The absence of Romans among playable civilizations was seen from the onset as an excuse to create an expansion pack. However, the package brought not only 4 new civilizations, but also a handful of new units and technologies, so it became as popular among players as the original game (Todorović, 1998, p. 65). Certainly, there are plenty of examples of DLC purchases that do not offer a substantial improvement in the gaming experience, but unjustifiably torn parts of the original game, with the sole purpose of extra billing (Fox, 2020). The prices of expansion packs or seasonal passes usually range from

25% to 50% of the premium price (i.e. 15-30 US dollars or euros), and, therefore, represent a very important source of additional income, since their creation largely relies on recycled original content. For some games with aggressive monetization, several different packages are often offered at the same time, for the purchase of which the player has to spend more money than for the original game, as in the case of *Mortal Kombat X*.

The next large group of microtransactions leads to a change in the gaming experience. It is especially present in mobile video games, although it can also occur in computer and console video games. The general approach to mobile games is that the player is free to start the game without any payment (*free-to-play* or *freemium* concept), in order for the game to become known and interesting to the widest possible gaming audience. However, at some point, progress through the game begins to slow down, and often becomes virtually impossible without paying for microtransactions. According to some research, only about 1.5% of players continue to play, but the amounts of money they spend are on average higher than the premium price for computer and console games. The amounts that players are willing to pay are very different, so about 10% of players who pay bring approximately 50% of the total income. This means that 0.15% of the intialplayers create half of the total revenue (Peterson, 2015). Because of the amount of money they spend, and, therefore, the tremendous impact they have on the game, such players are called *whales* in the jargon (Wong, 2018). By buying weapons, items or technologies that bring an advantage, they have a better chance of winning than players who do not pay. A common way to operationalize this type of microtransaction is to sell time. Performing the assigned operations requires somecooldown time. Of course, that time can be shortened by paying for microtransaction, which speeds up the progress and completes the previously started action (Tomić, 2017). *Forge of Empires*, a very popular online strategy game applies this gameplay. Players who pay for this type of microtransaction are more likely to progress than their opponents.

The most controversial forms of microtransactions are the so-called loot boxes. For example, in the *World of Thanks*, players get loot boxes for the appropriate achievements. By opening the box, players get additions and improvements, which can be cosmetic in nature, but also can substantially improve their gaming experience by changing the existing game balance with better forms of grenades and armor. The problem is that in games, loot boxes are obtained very rarely and require a certain performance from the players. Also, the playersoften do not need the box content or it does not match their affinities. That is why the publishers leave the possibility of additional purchase of loot boxes for money, regardless of the achievements. Since player only choose the number of boxes of unknown content during the purchase, they practically buy "blindly", hoping for the necessary content. Numerous authors have pointed out that this is a form of gambling, because players pay for the very opportunity to get something they need, but they can end up with items they do not need (Xiao, 2020). The problem with loot boxes is that their value is not based on

actual content, but on what players hope they can get. When paying for a loot box, players rely, at least in part, on luck that the content will suit their needs. Griffiths (2018) considers that the purchase of loot boxes satisfies all the general elements of gambling (defined by Griffiths, 1995, p. 1-2). However, some psychologists believe that buying loot boxes is essentially different from gambling, because the players always get something, only that it may not be the thing they need at a given moment. Therefore, the purchase of loot boxes is closer to collecting sticker albums, because the contents of the box do not depend on the moment of opening, but on the moment of purchase (Hood, 2017).

The debate has outgrown academic circles, and the national legislations of the EU member states, the United States and the United Kingdom have also addressed this issue (Cerruli-Harms et al., 2020; Hamilton, 2020). Some video games are banned in Belgium, the Netherlands and Slovakia due to the implementation of loot boxes, where courts have established the existence of elements of unlicensed games of chance. Despite the negative attitude of the public, the trend of implementation of this type of microtransactions continues. Zendle et al. (2020b) find that 58% of mobile games and 36% of high-income computer games have a loot box system implemented. They also find that 57% of games for the Andriod platform, which have a PEGI rating of 7+, have a system of loot boxes implemented, making it accessible to primary school children.

2. Model construction

2.1. Theoretical background

Behavioral economics studies how economic actors (individuals, households, businesses, state) actually make a decision. It uses concepts and evidence from psychology to improve understanding of economic decision making. Game theory has rapidly become an important foundation for many areas of economic theory, such as transactions in decentralized markets. In this regard, behavioral game theory uses experimental evidence and psychological intuition to generalize standard assumptions of game theory, and explores the interaction between real actors (Radukić et al., 2020, p. 249).

The goal of a significant body of research on microtransactions is to establish a link between gambling propensity and in-game purchases (McCaffrey, 2019; King et al., 2019; Stevens et al., 2021). The mentioned research is focused on the phenomenon of loot boxes, due to the fact that players can potentially spend the highest amounts of money on this form of microtransactions. Therefore, other forms of microtransactions are often out of research focus. From an economic point of view, this neglect is not justified. DLCs are the form of microtransactions with the highest single price, while cosmetic purchases and *pay-to-win*microtransactions can be repetitive, the same as the loot boxes purchases (Gach, 2017). The gamers'

motives for buying alternative forms of microtransactions are completely different. Gamers buy DLC content because of a hedonistic desire to expand content that makes them joyful or because of loyalty to the video game brand. Pay-to-win microtransactions are made in desire to feel superior and overcome one's own shortcomings in gaming or due to pure competitiveness (Huang, 2018). The motive for buying cosmetic accessories can be collecting or obsession with shopping (Yilmaz, 2016). The research conducted for the purposes of this paper is based on the fact that gamers perform microtransactions for different motives and thus do not show the same tendency towards all types of microtransactions. Its goal is to determine the existence and significance of these inequalities. It relies on a comparative analysis of the attitudes of gamers from Serbia and Poland.

2.2. Questionnaire and sample

A survey questionnaire was used to collect data, divided into two parts. The first part contained questions that serve to form the profile of respondents, related to their gender, age, level of education and previous experience with video games and microtransactions (a total of 8 questions). The second part contained a total of 16 questions, the answers to which were given via a five-point Likert scale (see Appendix). The questions contained clearly defined items (Sekaran, 2003) referring to the tendency towards a certain form of microtransactions. Number 1 meant complete disagreement, and number 5 fullagreements with the givenitem. A complete questionnaire is given in the appendix. Comparison is made on the examples of Serbia and Poland.

Poland was deliberately chosen for comparison with Serbia. This is a state of Slavic culture, which at first glance should show great similarities with Serbia in terms of gamers' attitudes. However, Poland also has an exceptional gaming culture, with a large number of video game gamers and successful development and publishing studios. The most famous among them, CD Projekt, is well-known for the globally popular games Witcher and Cyberpunk 2077. Due to the circumstances of the development of the gaming industry and culture, Poland is an ideal example for comparison.

The data was collected online, by posting a link to the questionnaire on the largest gaming forums in Serbia and Poland, *www.sk.rs* and *www.gry-online.pl* respectively. The questionnaire intended for gamers from Serbia was set in Serbian, while the questionnaire intended for gamers from Poland was set in English. Both links were active for a week, in the period from 19March to 26March 2021. Based on the given answers, four key variables were formed, one for each type of microtransactions. In the last step, a t-test was applied to each of the observed variables, in order to determine the statistical significance of the differences between their mean values.

3. Results

During observed period, a total of 634 answers to the questionnaire intended for Serbian gamers and 2097 answers to the questionnaire intended for Polish gamerswere received. All incomplete questionnaires were eliminated, so that 611 questionnaires for Serbian gamers and 1911 questionnaires for Polish gamers were taken into consideration. The criterion for forming the sample was regular playing of video games for a longer period of time and at least one microtransaction performed. Respondents who do not play video games regularly were not taken into account when analyzing the attitudes of players towards microtransactions, regardless of the number of previously performed microtransactions. After applying these two criteria, 289 questionnaires for Serbian gamers and 1305 questionnaires for Polish gamers became the subject of analysis. Table 1 compares the gaming habits of respondents from Serbia and Poland.

Table 1. Comparative presentation of the respondents' playing habits

Question	Answers	Number of observations	Percentage	Number of observations	%
		Serbia		Poland	
How often do you play video games?	Less than once a month	37	6.06%	189	9.89%
	At least once a month	173	28.31%	484	25.32%
	At least once a week	189	30.93%	491	25.69%
	Several times a week	141	23.08%	407	21.17%
	Every day	71	11.62%	340	17.79%
Which platform do you play on most often (multiple answers possible)?	PC, laptop	490	80.20%	1123	58.77%
	Game consoles	142	23.24%	996	52.12%
	Mobile phone	177	28.97%	1345	70.38%
Have you ever paid for microtransactions?	Never	320	52.37%	599	31.34%
	Yes, at least once	99	16.20%	225	11.77%
	Yes, in several different games	115	18.82%	637	33.33%
	Yes, I pay at least once a month	73	11.95%	344	17.47%
	Yes, I pay at least once a week	4	0.65%	106	5.55%

If you have never paid for microtransactions, what is the main reason?	I think they are too expensive	37	11.56%	165	27.55%
	I don't have a payment instrument or enough money	29	9.06%	33	5.51%
	I think that in this way the publishers take money that does not belong to them	58	18.13%	81	13.52%
	My position is that I do not pay for additional content	111	34.69%	70	11.69%
	I play video games for pleasure, I don't need them	41	12.82%	179	29.88%
	I play video games where they are not offered	44	13.75%	71	11.85%

Source: Authors' research

In the first question, which refers to the frequency of playing video games, the two samples show great similarity. The most common answer in both cases is "at least once a week", while the other answers do not differ much. However, there are great differences in the answers to the following two questions. Gamers from Serbia predominantly play video games on computers, while those who use consoles, such as Sony Playstation or Xbox, make less than a quarter. At the same time, each of the three gaming platforms is used by over 50% of the Polish gamers. The difference is most pronounced in terms of mobile phones and tablets – approximately 70.4% of Polish gamers use them to play, compared to only 29% of Serbian gamers. This drastic difference may partly explain the contradictions in the next question, which refers to the payment of microtransactions.

Over 52% of gamers from Serbia stated that they have never paid for microtransactions, compared to slightly more than 31% of gamers from Poland. Since games intended for mobile phones appear more often in freemium form and have a more aggressive monetization strategy (i.e. games paid at premium prices are

more common in games intended for computers), the previously determined difference may partly explain the uneven use of microtransactions. Inequalities are also observed among those gamers who paid for microtransactions in terms of frequency. About 12.6% of gamers from Serbia pay for microtransactions at least once a month (including those who do it on a daily basis), while among gamers from Poland this percentage is almost twice as high and amounts to about 23.05%. In order to fully understand why players do not pay for microtransactions, a fourth question was introduced, which referred only to users who had marked the first answer in the previous question.

Table 2. Demographic structure of players

Category	Answers	Number of observations	Frequency	Number of observations	Frequency
		Serbia		Poland	
Gender	Female	33	11.42%	382	29.27%
	Male	256	88.58%	923	70.73%
Age	18-25	68	23.53%	304	23.30%
	26-35	107	37.02%	451	34.55%
	36-45	77	26.64%	336	25.75%
	45-55	29	10.03%	167	12.79%
	55+	8	2.77%	47	3.60%
Education	High school	50	17.30%	201	15.40%
	Student	98	33.91%	341	26.13%
	Graduate studies	86	29.76%	494	37.85%
	Master, magisteror PhD	55	19.03%	279	21.38%
Income	Unemployed	101	34.95%	295	22.61%
	Minimum wage	19	6.57%	194	14.87%
	More than minimum wage, but under national average	70	24.22%	206	15.79%
	At national average	71	24.57%	275	21.07%
	Above average, but under 200% of national average	24	8.30%	183	14.02%
	More than 200% of national average	4	1.38%	152	11.65%

Source: Authors' research

The largest share of gamers from Serbia states that they do not pay for microtransactions because they never buy any accessories in video games, while in the second place is the attitude that publishers want to earn money that does not belong to them. These two answers are the reason for about 52.7% of players. Only 25% of the Polish gamers state the same reasons. On the other hand, most Polish gamers do not pay for microtransactions because they play video games for pure pleasure and because they consider microtransactions to be too expensive. These two

answers are the reason for about 57.4% of gamers. That the difference in the representation of gaming platforms is not crucial is also shown by the fact that only 13.8% of gamers from Serbia stated that they only play video games in which microtransactions are not offered. So, the cultural difference of playing video games is also extremely important. For further research purposes, only questionnaires of users who met the two mentioned criteria were used. In both samples, non-payment of microtransactions was the dominant criterion that eliminated the respondents from further research. Table 2 shows the demographic structure of the respondents whose views were discussed.

A significant difference between the samples is observed in terms of gender structure: only 11.4% of the surveyed players from Serbia are female, while among the respondents from Poland, there are 29.3% of them. The age structure shows great concordance, with no deviations greater than 3%. There are differences in terms of educational structure and income of respondents. Among the respondents from Serbia, there are less than 49% of those who have bachelor degrees (or higher academic title) while at the same time their share among the respondents from Poland is over 59%. Opposites in terms of income exist at the very bottom and at the top of the scale. Almost 35% of gamers from Serbia are unemployed, while only 22.6% of gamers from Poland are without income. There are also differences among gamers with income aboveaverage. There is less than 10% of them among gamers from Serbia, while almost 26% of gamers from Polandbelongto one of these two categories. These contradictions are another proof of the existence of cultural differences in playing video games.

The collected data was updated in Microsoft Excel. It was then transferred to SPSS 22, which was used to construct question-based variables, calculate mean values, standard deviations, and cronbach'salpha values. The values of descriptive statistics are presented in Table 3.

Table 3. Descriptive statistics

Varijable	Serbia			Poland		
	Arithmetic mean	**Standard deviation**	**Cronbach's α**	**Arithmetic mean**	**Standard deviation**	**Cronbach's α**
DLC	4.17	0.81	0.841	4.32	0.96	0.855
Cosmetics	3.80	0.84	0.814	4.19	0.85	0.893
Pay-to-win	2.11	0.59	0.911	2.76	0.82	0.811
Loot Boxes	2.98	0.64	0.888	4.04	0.86	0.889

Source: Authors' research

Based on the data from Table 3, key differences in the attitudes of gamers from Serbia and Poland states can be identified. Cronbach alpha values are above the minimum acceptable value of 0.70 for all observed variables (Cronbach, 1951). Also, the values for all variables are maximum when all questions are included (*scale if item deleted* values are lower), which confirms that the questionnaire was consistent. It is easy to see that descriptive statistics for all variables have a higher value in the sample of Polish gamers. The range of the highest and lowest mean values for gamers from Serbia is 2.16, while for gamers from Poland it is slightly lower and amounts to 1.56. Higher mean values show greater propensity Polishgamers towards all forms of microtransactions. The difference is least pronounced in terms of purchasing DLC packages. At the same time, it is the only form of microtransactions that has an average value higher than 4.00 for gamers from Serbia. The most pronounced difference between the mean values in terms of buying loot boxes is as high as 1.06. In both samples, the lowest mean values are related to pay-to-win microtransactions.

In order to determine the statistical significance of the differences in the attitudes of the gamers of Serbia and Poland, a t-test was performed for each of the observed variables. A separate pair of hypotheses was formulated for each test, with the null hypothesis saying that there is no difference in the mean values of the two samples, while the alternative hypothesis rejects the null hypothesis. An overview of the hypotheses is given in Table 4.

Table 4. Overview of null and alternative hypotheses

Null hypotheses	Alternative hypotheses
H1: There is no statistically significant difference in the attitudes of gamers from Serbia and Poland regarding the propensity to perform DLC microtransactions.	H1a: There are statistically significant differences in the attitudes of gamers from Serbia and Poland regarding the propensity to perform DLC microtransactions.
H2: There is no statistically significant difference in the attitudes of gamers from Serbia and Poland in terms of propensity to perform cosmetic microtransactions.	H2a: There are statistically significant differences in the attitudes of gamers from Serbia and Polandregarding the propensity to perform cosmetic microtransactions.
H3: There is no statistically significant difference in the attitudes of gamers from Serbia and Poland regarding the propensity to perform pay-to-win microtransactions.	H3a: There are statistically significant differences in the attitudes of gamers from Serbia and Poland in terms of propensity to perform pay-to-win microtransactions.
H4: There is no statistically significant difference in the attitudes of gamers from Serbia and Poland regarding the propensity to buy loot boxes.	H4a: There are statistically significant differences in the attitudes of gamers from Serbia and Poland regarding the propensity to buy loot boxes.

Source: Authors' research

Descriptive sample statistics were used to test the statistical significance of differences in attitudes. The t-test statistics were calculated according to the formula:

$$t = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad (1)$$

where $\overline{X_1}$ and $\overline{X_2}$ are samples' means, s_1^2 and s_2^2 are samples' variances, and n_1 and n_2 represent the numbers of observations in the sample. The t-test results are shown in Table 5.

Table 5. T-test result and accepted hyypotheses

Variable	Value of t-test	Statistical significance, confidence level	Accepted hypothesis
DLC	2.4943	Yes, α=0.05	rejects the null hypothesis with a confidence level of 0.05 and concludes that there are statistically significant differences
Cosmetics	6.8029	Yes, α=0.01	rejects the null hypothesis with a confidence level of 0.01 and concludes that there are statistically significant differences
Pay-to-win	13.9772	Yes, α=0.01	rejects the null hypothesis with a confidence level of 0.01 and concludes that there are statistically significant differences
Loot Boxes	20.9601	Yes, α=0.01	rejects the null hypothesis with a confidence level of 0.01 and concludes that there are statistically significant differences

Source: Authors' research

Based on the results presented in Table 5, it can be concluded that there is a statistically significant difference in the attitudes of gamers from Serbia and Poland towards all observed forms of microtransactions. The smallest difference was observed in terms of attitude towards DLC packages, with significance achieved at a confidence level of 0.05. Since for a confidence level of 0.01 the critical value is 2.56, the remaining three t statistics show significance with this confidence level. The value of t statistics is increasing and the highest value is reached when examining differences in attitudes towards loot boxes.

Conclusion

The research presented in the paper established the existence of a statistically significant difference in the attitudes of video game players from Serbia and Poland regarding the microtransactions. Descriptive statistics showed higher mean values for the sample of Polish gamers in terms of all observed variables. The t-test confirmed that these differences are not accidental and that with a high level of

confidence it can be concluded that there are systemic differences in the attitudes of gamers. The questionnaire also shows differences in the cultural approach of video game players. The sample of Polishgamers showed a higher share of female gamers, higher education and high incomes. There are also significant differences in terms of the share of gamers who pay for microtransactions in the total sample, as well as in the key reasons why other gamers do not want to pay for them. Therefore, it can be concluded that differences in gaming culture represent a significant aspect, which should be paid attention to in the future study of the video game market and monetization strategies.

The main research limitation is that the focus is on differences in attitudes, rather than on the key motives for the use of microtransactions. Thus, the research found the biggest differences in terms of attitudes towards loot boxes. Polish gamers are more inclined to buy them, but it has not been determined what is the basic motive for them, as well as whether that motive is missing for gamers from Serbia, or whether the difference is a consequence of the general attitude towards microtransactions. Research that would include the motives themselves would have to be more psychological in nature and based on the form of interviews, with open-ended questions. Regardless of the width of the sample, it is clear that such research would require more time, different processing methods and more space to explain the obtained results. Therefore, the inclusion of such research, regardless of the undeniable usefulness, would imply the form of a broader study, because it would exceed the limits of one article in a scientific journal.

The determined significance of cultural differences would gain in importance if another sample was added to the analysis. It is true for gamers from the Far East that they are in favor of precisely those forms of microtransactions to which the two observed samples showed the most resistance pay-to-win microtransactions. Another possibility is to segment gamers according to the platform on which they predominantly play video games and to determine the difference in attitudes on that basis. Also, the future research could include the next step, which would involve constructing a research model based on TAM or a related theory thatcould include the variables obtained by the questionnaire.

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PRIMENA ISTRAŽIVAČKOG MODELA IGRA KAO USLUGA: MIKROPERSPEKTIVA

Rezime: Od zanemarljive tržišne niše industrije zabave, izdavanje video igara je postalo izuzetno profitabilan posao. Nastanak servisa za digitalnu distribuciju video igara je omogućio uspostavljanje stalne veze igrača sa izdavaocem, čime je stvorena mogućnost produbljivanja ponude. Stvoren je model igre kao usluge koji se zasniva na kontinuelnom toku prihoda, na osnovu prodaje dodatnog sadržaja u već distribuiranoj igri. Prihodi nastali prodajom virtuelnih dobara unutar igre nazivaju se mikrotransakcijama. Predmet rada su stavovi igrača video igara u Srbiji i Poljskoj prema različitim tipovima mikrotransakcija. Rad ima dva ključna cilja: prvi, da utvrdi da li postoje razlike u stavovima prema različitim tipovima mikrotransakcija i drugi, da utvrdi da li postoje razlike u stavovima igrača iz Srbije i igrača iz Poljske. Radi postizanja ciljeva, igračima iz Srbije i Poljske je distribuiran upitnik, putem koga su mogli da izraze svoje stavove u vezi mikrotransakcija. Primenom t-testa, utvrđeno je postojanje statistički značajnih razlika u stavovima igrača svrstanih u ova dva uzorka i to za sve posmatrane oblike mikrotransakcija.

Ključne reči: mikrotransakcije, ponuda, digitalna distribucija, segmentacija, bihevioristička teorija igara, model.

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Appendix

Questionnaire on the microtransactions usage in video games

Please help the research of the video game players' attitudes towards paying microtransactions. The research is conducted for the purpose of writing a scientific paper. The questionnaire contains statements that should be read and indicate on the specified scale to what extent you agree with them. If you *do not agree at all* with the statement, mark number 1, if you *partially disagree*, mark number 2, if you *are not sure*, mark number 3, if you *partially agree*, mark number 4 and if you *completely agree*, mark number 5. It takes 3-5 minutes to complete the questionnaire. At the beginning of the questionnaire, demographic data are sought, which are used to analyze different demographic categories. The questionnaire is completely anonymous and the entered data will be used exclusively for the purpose of scientific research for which they are collected. Under no circumstances will the data be disclosed to third parties or misused in any way.

We thank you in advance for your cooperation!
Authors

Demographic data

1. Gender:
- ○ female
- ○ male

2. Age:
- ○ 18-25
- ○ 26-35
- ○ 36-45
- ○ 46-55
- ○ 55+

3. Education:
- ○ high school
- ○ student
- ○ bachelor degree
- ○ master degree or higher

4. Monthly revenue:
- ○ Unemployed
- ○ Minimum wage
- ○ More than minimum wage, but under national average
- ○ At national average
- ○ Above average, but under 200% of national average
- ○ More than 200% of national average

Video games experince

1. How often do you play video games?
- ☐ less than once a month
- ☐ at least once a month

- ☐ at least once a week
- ☐ more than once a week
- ☐ every day

2. Which gaming platform you often use (multiple answers possible)?
- ☐ PC, laptop
- ☐ gaming consoles (Xbox, Sony, Nintendo)
- ☐ mobile phones, tablets

3. Have you ever paid the microtransactions?
- ☐ never
- ☐ yes, at least once
- ☐ yes, several times
- ☐ yes, at least once a month
- ☐ yes, at least once a week

4. If you have not paid a microtransaction, what is the main reason?
- ☐ I consider them to be too expensive
- ☐ I do not have payment instrument/or enough money to pay for them
- ☐ I think that it is a way for publishers to acquire money that does not belong to them
- ☐ My stance is that I never pay for extra content
- ☐ I play video games for pleasure, so I do not need extra content
- ☐ There are no microtransactions offered in video games I play

I do not agree at all	I partially disagree	I am not sure	I partially agree	I completely agree
1	2	3	4	5

1. DLC

I like to buy expansion packs for video games that I already play.	1	2	3	4	5
Playing expansion packs make video games interesting over a longer period of time.	1	2	3	4	5
I think that expansion packs justify the price, because the player already knows what to expect in them.	1	2	3	4	5
If the developers included all the content in the first version of the game, its price would be higher, so the expansion packs are fair even to players who did not like the game.	1	2	3	4	5

2. Cosmetic microtransactions

It makes me happy when I have the opportunity to purchase alternative skins for characters in video games.	1	2	3	4	5
Cosmetic microtransactions do not change the balance of the video games and therefore are very fair.	1	2	3	4	5
Video games should offer the possibility of cosmetic microtransactions, because players are often collectors who are very interested in such accessories.	1	2	3	4	5
If the video game does not appeal to me, cosmetic microtransactions would not change my interest.	1	2	3	4	5

3. Pay-to-win microtransactions

In some video games, there must be an option to pay for faster progress.	1	2	3	4	5
Players should have the opportunity to improve their characters by paying microtransactions, if they wish.	1	2	3	4	5
Microtransactions that change the balance can only change the conditions, winning the game still depends on the skills of the player.	1	2	3	4	5
It is justified for players to invest money for progress in the video games, because other players invest the excess free time they have.	1	2	3	4	5

4. Loot boxes

Interested players should be able to buy loot boxes, because every other player can progress through the game without paying for them.	1	2	3	4	5
The players never know what the loot boxes bring, so they consciously take the risk.	1	2	3	4	5
In most cases loot boxes do not bring a change in game balance, so they should not be banned.	1	2	3	4	5
Purchase of a loot box brings additional excitement in the video game, because the player is not sure what it will get.	1	2	3	4	5

Thank you for completing the questionnaire!