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OLEKSANDR KURCHENKO

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GROBIŲ DĖŽUČIŲ POVEIKIS KLIENTŲ PASITENKINIMUI IR LOJALUMUI INTERNETINIULOSE VAIZDO ŽAIDIMULOSE	IMPACT OF LOOT BOXES ON CUSTOMER SATISFACTION AND LOYALTY IN ONLINE VIDEO GAMES
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Master degree student _____

Supervisor _____

Assoc. Prof. Aurelija Ulbinaitė

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Introduction

Relevance of the topic

Loot boxes have become one of the integral parts of online video games. They are one of the reasons why customers continue playing and opening boxes, motivated by getting new accessories or bonuses (Zendle and Cairns, 2018). On the one hand, they can cause gaming addiction and satisfaction, so players may not be even interested in a game, but in getting items from loot boxes that prolong players' staying in a game (Lu and Wong, 2008; Balakrishnan and Griffiths, 2018). On another hand, loot boxes are new in the game industry, so people perceive them differently, as a result even a single mention about it can cause a negative impact on companies' image. Still, companies do implement loot boxes system even knowing it may cause negative impact since 78% of all players have purchased at least one loot box. What is more, the total revenue only from loot boxes was around \$30 billion in 2018 (Li and Nower, 2018).

Previous researchers define that it is crucial to companies of online video games to have loyal customers due to the high competitiveness inside of the industry. It is clear that loyalty is competitive advantage inside the online game industry (Yang et al, 2009). Especially it is important when two compared games both have a free-to-play model, where loot boxes are the main source of the revenue.

Yang et al (2009) state that the key factors of loyalty in online games are service quality, transaction cost and experience value. Moreover, from Teng's (2010) research, it is possible to make a conclusion that customization has a great influence on both satisfaction and loyalty of customers. What is more, this research demonstrates that competition among players is vital for gamers satisfaction and loyalty, so this reason could be the most important on influencing loyalty. While loot boxes contain customization and have a positive impact on experience value, when a player opens it and gets a rare item; loot boxes may have an item that will give advantage to a purchaser, so it strongly influences competition and challenges.

Some previous researches show that satisfaction has no impact on loyalty, for example, Bowen and Chen (2001) state that satisfaction has a no-linear impact on loyalty. Also, Jahanshahi et al (2011) demonstrate that loyalty is highly connected with high prices of the product, due to fact that customers lie about their satisfaction with the product that has a high price. They notice that subject of satisfaction and loyalty are ones of the most popular topics for analysing, but still, there are a lot of contradictions among researchers. In addition, they recognized that the results can be opposite in different industries, so loyalty and satisfaction will be connected. The impact of satisfaction on loyalty

in online games are not studied well, that is why it is important for the research to investigate what impact satisfaction has on loyalty in the online game industry.

Scientific problem

The weakness of previous researches is that loot boxes can have a different impact on players satisfaction and loyalty in the end because it depends on the type of an item that loot box contains, whether this item is accessory, that changes the only appearance, or it is a “boost” item that gives an advantage among players that leads to a pay-to-win system in a game (Griffiths, 2018). While previous researches do not mention that there are different types of loot boxes. In addition, loot boxes can be purchased for real money and for game-currency that is able to get just by playing in it, that also can have a different impact on customers satisfaction. Moreover, another gap is that researchers do not include fact that loot boxes exist in different types of games: free-to-play, buy-to-play and subscription systems of payment (once per month).

The practical and theoretical value of the topic

The theoretical value of this topic it is its uniqueness. There are not so many researches on this subject and some of them use the wrong analysing and methods, for example, not suitable variables. However, loyalty and satisfaction are the two most important subjects to study in the marketing sphere, loyalty and satisfaction are rare subjects to study in the sphere of online video games. The practical value of this topic is that companies that develop online video games will have the ability to see loot boxes from the perspective of consumers.

Considering all gaps of previous researches, degree project addresses the following research question:

How do loot boxes effect on satisfaction and loyalty in online games?

The aim of this degree project is to examine the impact of loot boxes on buyer satisfaction and loyalty in online video games. These objectives will be used to achieve the main aim.

- To investigate how loot boxes affect loyalty and satisfaction in online games considering different business models.
- To investigate how different types of loot boxes influence customers satisfaction and loyalty.
- To investigate how satisfaction affects loyalty in video games.

Scientific research methods

Systematic analysis of scientific literature, internet surveys, statistical analysis.

Methodology

The methodology for this work is based considering other works related to the influence of customer satisfaction on customer loyalty from different industries because this particular subject is not studied so often. What is more, the previous subjects, as it has been mentioned before, we're using not the best approach to estimate the influence of loot boxes on customer satisfaction and customer loyalty, since they have some flaws, for example, not enough variables.

Some of them are trying to focus on problems considering the business model of a game not taking into the account different types of loot boxes what can have a significant effect on the outcome.

The method of data collection

Since the subject of the work is part of the internet the best way to collect data from the gamers for such an interesting and disturbing subject, this research will use online surveys for data collection since it has plenty of advantages considering the average age of online gamers.

The method of data analysis

This study will use the Likert method to analyze collected data due to its simplicity and rated scale from 1 – disagree to 5 – agree what be the best option for data analyzing for this subject. The problem that people can be not honest while answering the question may be eliminated because the subject can be interesting and important for many players.

Key literature used

The key literature is the studying of loot boxes, loyalty and satisfaction in online video games. A second important part of the studying is loyalty and satisfaction in all other spheres of business.

Limitations of the study

All of the results of the research will be only consumer-based. If they are satisfied with loot boxes in online video games or not and whether they are loyal or not. The most important information about sales, revenue and profit are not available for free using of most big companies. The problem can be that even if the consumers are not satisfied or loyal, the games can get huge profit from consumers.

1. THEORETICAL BACKGROUND OF LOOT BOXES, LOYALTY AND SATISFACTION

1.1 The influence of consumer satisfaction on consumer loyalty.

1.1.1 Loyalty

The research would like to underline some definitions and explain them. There are many definitions of loyalty, and it is true to define the real definition that every researcher would agree, but the research will summarise the previous researches and make some conclusions from their studies.

By loyalty the research will mean such a figuratively positive attitude of consumers in relation to everything related to the organization's activities, products and services produced, sold or provided by the organization, company personnel, image of the organization, trademarks, logo, etc. It is the presence of this loyalty, that is, a favourable attitude of consumers to this company, product and is the basis for a stable sales volume. Which in turn is a strategic indicator of the success of the company. One can also assume that loyal customers can be called those who for a long time (compared with the period of operation of the considerables) remain with the company and make repeated purchases.

Loyalty is behavioural measurements, attitudinal measurement and composite measurements (Bowen and Chen, 2001). This can be explained as the measurement of how people behave themselves during the long period of time considering the company's success or any failure. Any company can make failure so a loyal customer will support it and «close his\her eyes» if these mistakes happen not so often. Also, loyalty depends on how bad this mistake was. Now the degree can remember the diesel of Volkswagen company when the «People's car» was trying to lie to people so in the end, they lost most of their loyalty for long years.

Loyalty is positive word of mouth comment, customer loyalty and sustainable profitability (El-Adly, 2018). The meaning of this definition can say that loyal customers will probably tell other people about this company. What is more important, if you have a loyal customer you will have sustainable development and profit will always be positive and not negative. The industries can show it differently but considering online video games the example of Rockstar can be observed. For example, it has sustainable profit and development even when the company has produced since 2013 to 2018 only two video games what is a comparatively small number taking into the account any other big game developers as Rockstar is by itself.

The researchers Lee and Cunningham (2001) have underlined that loyalty creates a comparative advantage among the companies. So, this explanation of the term is more important to companies than to a customer because simply speaking loyalty is comparative advantage.

The researchers Park and Kim (2018) has proven in their work that trust may lead to loyalty. So, in another word, loyalty is also the trust of customers. How customer sees the future products that haven't been released yet what is truly important in video online games due to the fact that the success of a game also can be explained taking into an account its pre-sales and pre-orders.

Due to loyalty customers can be grouped into 4 types. Absolute loyalty - a situation in which a high level of behavioural loyalty corresponds to a high level of perceived loyalty - is the most favourable for the organization. Consumers with absolute loyalty are the easiest to keep. These standards are in line with quality standards. This means that perceived loyalty is not reinforced by consumer behaviour. It was presented only from among competitors. The reasons for this are, first of all, low-income factors. In such situations, it is necessary to strengthen the position achieved by developing behavioural loyalty. For this, price incentives can be used, for example. False loyalty occurs when behavioural loyalty corresponds to a low level of perceived loyalty. This situation is dangerous because the consumer is not affiliated with organizations. It can only be a consumer organization, satisfying it to a greater extent. In order to retain consumers demonstrating this type of loyalty, it is necessary to reinforce perceived loyalty. Finally, lack of loyalty provides minimal retention opportunities. Organizations must either refuse to retain this part of consumers or take special measures to increase primarily perceived loyalty (Fedotova et al, 2019).

To sum up the definition of loyalty one can say that this term is also can be determined as positive perception towards a brand in any industry and can say about its quality of product and even service.

Loyalty has many of positive factors that can be caused by loyal customers. Bowen and Chen (2001) have underlined the most important ones. In their opinion, one of the most crucial is word-of-mouth when people tell others about the company, so-called «free marketing», this can cause that new potential customer will find some new company with a lot of benefits. Another not so obvious benefit that customer will pay higher prices for a product if they are loyal to it. The best examples of it can be any luxury car when customer knows that the cost price is much lower than the market price but still buy it and mostly satisfied with it (Šerić and Gil-Saura, 2019)

In addition, it may be profitable to the research to explain and study the general drivers of loyalty that can be presented in different industries to understand the core of loyalty. One of the drivers has

been mentioned before is trust. People have to understand what they are buying and why. While buying company's new product customer do not have to hesitate that it may be bad or have some flaws that are not expected (Anton et al, 2014).

Another important driver of loyalty is quality. In most cases, quality is studied within product price (El-Adly, 2018). Some products may have low quality and low price, so it can be said that it is worthy of its money. The best example of it is low priced mobile phones that are popular in China and Russian speaking countries. In some cases, price is not important if the luxury segment is studied where the price is going to second place.

However, loyalty may be something that deceives the company thinking that the company has loyal customers, but these loyal customers may not give any profit to the company. It can be related to most industries because most of product and services must be purchased for example a phone or booking a hotel are already bringing the profit. If the game industry is observed there is a different situation with loyalty.

Most of the online video games have a free-to-play model so people have to pay nothing to play this game, enjoy and to be loyal. On the one hand, a person plays these all games of one exact company what can be considered that the person is loyal, but he paid nothing and all the profit that companies get from free-to-play games are donation systems and loot-boxes what are part of donations. In the end, the company has a relatively loyal customer who brings zero profit. As a result, the definition of loyalty in video games may be different from other industries.

Also, loyalty as a comparative advantage can mean that a customer may choose his favourite company's product over their competitor's. For example, buying one car from the company customer is loyal to. The case with online video games is not so clear since as it has been mentioned most of the online games have a free-to-play model so a customer may play many games and lose nothing because it will not have any financial decision to a customer. So, a consumer may play both these games, even if he is not loyal to another company,

Taking into account other authors' definitions and results from researches, it would be suggested that this definition considering online video games. Loyal customer in an online video game is a customer who brings sustainable profit to a company through buying its products, buying integrated products in a game trough donation system or\and loot boxes, and buying integrated products more often in a company he is loyal to more than in one he is not loyal.

1.1.2 Satisfaction

The main aim of any company is to satisfy a customer (Hult et al, 2018). If a person buys a product and is satisfied with it, there are big chances that a customer will do it again, but logically if a person is dissatisfied with a product, it may cause that a customer will tell friends and/or relatives that this product is not worthy of its money.

Satisfaction can be measured in many different ways, even it is a subjective thing that everybody understands in his own way. A person may say many negative things about a product but in the end, he still will say that he is satisfied with it, for example, due to its low price.

Satisfaction is «person's feelings of pleasure or disappointment that results from comparing a product's perceived performance or outcome with his/her expectations» (Kotler and Keller, 2009, p. 789). That can be interpreted as even if the quality of a product is bad, but person hasn't expected something huge so he or she can be satisfied due to low expectations and low price for example.

One of the foundations of loyalty is the positive experience that a consumer has gained in the process of purchasing a given product or service. For example, if someone is completely satisfied with the quality of the product, then, with all other factors unchanged, the next time one makes his consumer choice with a high degree of probability is in favor of this brand. In turn, when choosing a detergent, knowing that their rivalry produces considerable shampoos, his/her favorable attitude can be transferred to the detergents of this company.

The video online games and satisfaction of players can also be interpreted in that way when a player can often criticize the product and say that the competitors have better results in this sphere, but still to be satisfied with what he has. This can be explained through the free-to-play model when it has a lot of flaw or mistakes in programming, but a person pays nothing to get it.

In my opinion, it is more interesting to investigate games with subscription model when a person must pay monthly to get access to a game and in most cases, the game has to be purchased one before. The best example is Activision Blizzard's game «World of Warcraft». A person can be dissatisfied with a game but continue playing in it and buying the subscription for next month, even have an opportunity to stop it.

Satisfaction is strongly connected to its price. It is explained how to get a customer satisfied. Drivers of customer satisfaction may also vary from industry to industry. The research of Hallencreutz and Parmler, 2019 can demonstrate the general and universal drivers for each industry. These drivers are image, customer expectations, product quality, service quality and the perceived value that can later influence on customer loyalty. In addition, this research shows that it is more

important to understand the evolution of customer satisfaction due time more than a simple understanding of its drivers. It can be explained because of the high speed of evolving with appearing of new technologies or new services provided by a company to get their customers more satisfied. Moreover, this study demonstrates that it is worthy to be ready for evolving any moment due to high rivalry in any industry.

As I noticed from previous researches the satisfaction is not so often studied alone. The researchers more interested in loyalty or how satisfaction related to loyalty in different industries (Bowen and Chen, 2001) what are drivers (Anton et al, 2014) and do they have a liner or no-linear influence on each other (El-Adly, 2018).

The main problem of studying satisfaction while taking and analysis of the surveys may be that people can lie about their satisfaction with a product. It can be related to both low-priced and high-priced products. Customer may lie about high-priced just because that they bought the product with the high price and do not want to show people that they are satisfied with that especially if it is connected with any huge brand that is popular. The low-price products may have not real satisfaction results because of not enough amount of money to buy a high-priced one.

For a better understanding of customer satisfaction, as well as with customer loyalty, the research should explain the drivers of customer satisfaction. There are many drivers of customer satisfaction, but it can be generalized with the help of last researches on this subject. The main drivers of customer satisfaction are quality, efficiency, proper value and price, the excellence of service, customers expectations, and product's improvement compared with previous products (Helbling and Thomas, 2018; Hult et al, 2019; Kartika et al 2019.)

To summarize, the study follows that customer satisfaction is a function and expectation, and the actual performance of the product. If the actual performance indicators of the product are below preliminary expectations, consumer feelings are disappointed. If the product meets expectations, it is satisfied. If he has the quality characteristics of a product, then he or she is clearly satisfied.

1.1.3 Relationship between customer satisfaction and loyalty

First of all, this is crucial to understand how consumer satisfaction may affect consumer loyalty in online video games. Satisfaction and loyalty are the two most studied subjects in the marketing sphere. It would be wrong to say that the researchers found the universal answer to this

question. Besides, more researchers these subjects have – more views, opinions and results the subject gets. New variables appear with new researchers.

The main problem of studying satisfaction and loyalty is that there is no correct or wrong answer, due to the fact that the answer is also dependent on the industry where the subject is being studied. The results in automobile sphere and mobile phones may be totally different. Even the results in one sphere can be different considering the price of a car or social status of a person taking the survey.

The same may happen in any video online game. There are plenty of variables that can influence the final results. As it was mentioned in the introduction, the main problem was that previous researches were studying the loot boxes and its influence on any game not even taking into the account many aspects of gamers' wishes, priorities and standards that game has to have to satisfy customers and make them loyal that will be mentioned in the next part of this work.

On the other hand, Kasiri et al (2017) demonstrate the opposite results where customer satisfaction has a significant effect on customer loyalty in the sphere of services, but it is not defined if it has a linear or non-linear significant impact. In addition, Setiawan et al (2017) also demonstrate that customer satisfaction is strongly connected with customer loyalty in almost any industry.

Such results can be explained due to different variables taken for research and it is hard to calculate how many studies show strong connection proving that satisfaction has a linear effect on loyalty and opposite results with no effect or only linear one.

It is important to define in the study what effect satisfaction has on loyalty in online video games. The outcomes may vary due to different types of loot boxes and different types of online games with loot boxes. There are cases when a person can criticize game for many flaws, but still, he or she could spend at least 1000 hours playing in it what equals almost 42 days of real-time. Though a person can say that he or she is not satisfied with a game, the information shows the opposite, because nobody will spend 42 days in a game that he or she does not like, since people play games to entertain themselves, get fun and some special emotions.

1.2 Loot boxes and donation system

1.2.1 Donation system

The donation system is a purchase for real money of game currency or game items in a game with a free-to-play payment system, at best, from the publisher of the game. However, in “paid” (pay-to-play) games, publishers are also not shy about selling all sorts of cosmetic little things - and they

are quite buying, despite the fact that they have no actual use. For example, in World of Warcraft, you can buy a burning helmet, sword or horse, which do not give any bonuses.

The donation system is widely spread in video games. Mostly, donation systems used to be only in online video games and single-player games did not have such feature, before Dead Space 3 be EA publisher and Visceral Game studio. This is the first single-player game where loot boxes and donation systems have been presented, which caused many negative critics.

The donation system allows a player to buy something in a game for real money. The player wants to buy something, so he buys it. The opposite feature is loot box. Player can only guess what he is paying for and cannot be sure about its content.

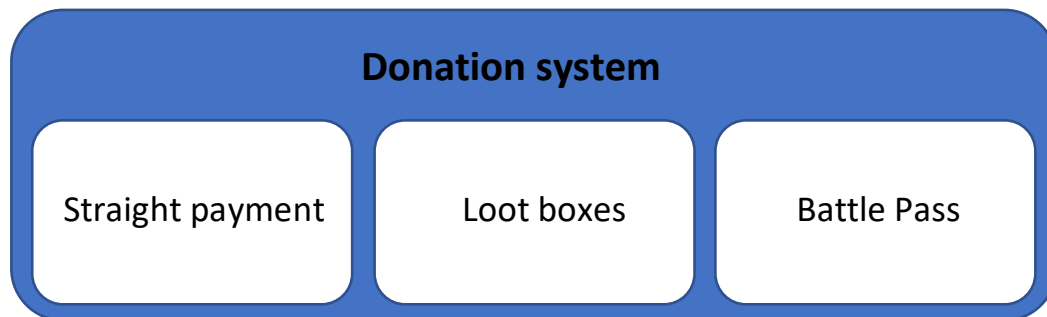


Figure 1. The donation system

Compiled by the author

The online game should be free. In this case, the game should be properly promoted, it itself should be with bright graphics, high-quality pictures and considerable voice acting. It is best to make sure that as soon as the player enters the game for the first time, training awaits him - a mentor, some knight, astronaut, sniper, boss monster or anything else that will be noticeable by a player. It has to be a person that has charm spreading out of the screen, (often mentors are drawn really well and often have a pleasant voice, perhaps even some famous actors). They will explain the controls in the game, lead the player by the handle through the base or interface: "Look, here we have a garage, here is the treasury, but here you can even make a beautiful video clip where the mentor explains what, in fact, is happening in the game universe. And the player himself really likes the game; it delays him".

At the initial stage of implementation, "beta test" or the initial levels of the game, donate is present, but it is presented as a donate that "does not violate the balance". In this case, in the cash shop for real money, a player can buy various modifications of one's character's appearance - a backpack in the form of a bear, rabbit ears, a tactical helmet or an armoured T-Shirt. They do not give any

advantage in the game; they are bought out of a desire to show it their friends. Regarding weapon, most often it is a gold/camouflage Kalashnikov assault rifle, or a gold Desert Eagle, which do not differ much from stock in terms of their characteristics. Or some super rare tank, aeroplane, a boat from the movie, not released into mass production, being a modification of a serial one or something else - they have no noticeable advantages over the usual ones.

However, in such a harmless state, they donate does not last long. The cost of additional options, considerable from the cash shop and other small treats is gradually increasing.

However, soon the role of donates in the game begins to increase dramatically, limited only by the strategy of publishers or server owners. The player notices that the bar for gaining experience after the n-th level almost stands still, no matter how often and successfully he or she goes to raids and battles. They pay not enough for completing missions, there is only enough money to repair the useless things in-game. A lot of interesting weapons have been introduced into the game, the characteristics of which sometimes exceed the previous items at times, but the player cannot buy them for in-game currency, beloved, but already beginning to annoy their old items. People even think that due to the fact that their item is old, they started losing in battles. Many developers use this trick to manipulate gamers.

Sometimes it also happens in the game - one enters the game, go3w into battles, complete missions, but his time in battle is limited by the energy, for each battle, a certain amount of it is removed from him. More often - three per battle, with the number somewhere in the fifteen or twelve. Full recovery will take around- 24 hours. If people cannot wait any longer there is always an exit who are ready to pay. Sometimes the developers go the other way: one can buy a VIP / Premium account for n days, and the energy will always be more, or even not limited at all (Steinemann et al, 2015.)

The smartest developers do this way of earning money. The donation itself may not give any noticeable advantage, stock weapons, body kits and other devices are quite suitable, but their prices are either unrealistically inflated (if some people want a weapon for 100 thousand in-game currency, but for a victorious battle they are given a maximum of 2 thousand), or they need to accumulate experience on them. Which, of course, accumulates extremely reluctantly. And as well as the last time, people are offered an exit where they can buy off their in-game freedom for some real-life money. Thus, the game creates the appearance that theoretically it is possible to play without donation, and the "whale (people who donate the most of the game income)" will swear (with a nasty smile on the other side of the screen) that he achieved everything himself, without investing financial resources in the game.

Thus, players don't want to quit the game they like, but without investing sometimes several thousand dollars into the game per month, the player simply will not be able to achieve noticeable results. Of course, it strongly depends on their business model and from the developers themselves.

Tellingly, donated games, especially browser / mobile games, are made in such a genre that the game mechanics do not give anything (battles like "Heroes of Might and Magic", Japanese role-play games, "farm – games where a player has to do many trivial things to get the progress)", "duels"), or seriously interfere (survival, role plat games) gathering players in a bunch in order to crush donators in number.

In addition, there are many ways to implement loot boxes and donation system. Developers have various methods of presenting, marketing, implementing and even removing loot boxes. There are plenty of them and it is not possible to count and identify them

1. Pay-to-win - free play in the mode that a player has to do nothing to win: here donate specifically affects the balance to the point that the player who brought in the money turns into imbalanced, and without this immobility, it is unrealistic to complete the game. Naturally, this causes even more disrespect, especially among people who grew up on the classic model, who perceive it as a form of fraud. A typical example is the Korean Massively multiplayer online role-playing games (MMORPG).

For electronic sports games, pay-to-win is ruining many aspects of the game, and if a player gets caught on this, it's hard to clean up. A story from DotA when one playable character was transferred to Dota2, they immediately made a paid ability: put a "Mines" sign. It didn't do anything except warn that the Technicians were here. People subconsciously avoided this sign, because it is not known whether there are mines there or not. There was a scandal that everyone was given the ability.

3. Mobile online games are the best example of Pay-to-win and loot boxes systems, which dominates mobile games. There are always two currencies available, one of which is always in short supply, obtaining items by randomization, the need to win this most scarce currency is the most commonly used machine in these games, and they appear most often when the player has already spent a certain amount of time and achieved first successes. For any developer to add some of this to even a slightly impressive project that is distributed on PC and consoles according to the classic model, it means to cover openly declare his solely commercial interests and the only thing that he wants is money. That developer is not interested in games in arts that may affect people loyalty and satisfaction (this is exactly what happened to Evolve).

A particularly one example is Cooking Diary. Regular coins have no value at the playroom, but rubies (currency bought for real money) are always not enough to make some in-game purchases, and with each new opened feature a payer needs more and more of them to buy improvements. If players don't even buy this, it will be very unpleasant to play, but there is no question of improving the products themselves or even buying clothes that do not affect anything for the character. The player can get rubies, of course, for free, but they are rarely given out and are so negligible that it does not look different than any other items that players can get for the in-game currency. The most crucial part of this game and type of the donation system will offer to spend once again much money in order to get such necessary rubies and some in-game items got by purchasing loot boxes.

The typical life cycle of mobile "free to install" is a development by pulling new skins onto the existing engine; abundant advertising, release with discouraging primary costs; plentiful advertising of a new update, release of an update; repeat until the "defaulters" base is lost and the "whales" exit the game.

3. Free-to-win model is the cons are the curtailment of advertising campaigns and the gradual withering away of servers as the profit stream is zeroed. Paid for demonstrating his abilities in-game is a correct free-play, where paid features do not affect the balance, which is why people have much tolerance to it. Basically, the money is spent on beautiful "clothes", and there may not even contain bonuses from them, but they may be (however, in this case, they will not give any huge advantages). A striking example without bonuses is Parapa - City of Dances and Dota 2. The example with bonuses is Dragon Nest.

Hero unlocking is another example of electronic sports games in MOBAs. Free players have a rotation of heroes - for example, out of fifty available, only ten are available, in a week - another ten. If players want a hero all the time they must pay or play really often to unlock this particular hero. It also happens in some mobile fighting games, for example, Hero Fighter.

4. Pay-to-loot - payment for the chance to win something of value by chance. It essentially turns such a game into an online casino. Because of this, they are prohibited in a number of countries at the legislative level, because if players try to consider them not as a game element, but as a subspecies of casinos, then it will be easier to ban them than to come up with some special rules (for example, to play such an online game, only through a gambling club inside a normal casino, because of which there would be more trouble, and there is little usefulness from it). Loot boxes (English-speaking developers) and gacha (Japanese / Korean) are a subspecies of such a casino with a significant share

of pay-to-win. In this case. More details will be shown in the next subsection (What is satisfaction? 2020).

1.2.2 Different types of loot boxes

The previous researches have ignored the fact that there are at least 2 types of loot boxes that are perceived differently by players. A loot box is a virtual item in computer games when used by which the player receives random virtual items that have meaning and purpose. Such items can be either purely decorative or affecting the gameplay - for example, rare armour or weapons (Macey and Hamari, 2019).

Loot boxes are a form of monetization of computer games buy a virtual "key". Some critics and players criticize loot boxes for their resemblance to unregulated gambling like slot machines, and for creating situations in which a paying player gains an advantage over other players ("pay-to-win"). Loot boxes are the most common source of things for "skin gambling." In addition, Loot boxes are governed by gambling laws in some countries in Asia and Europe.

Besides, Loot box can be named differently depending on the game. The names "box", "container" or "case" are often used in shooters, as players can get new looks or equipment for their characters. Digital card games (for example, Hearthstone developed by Activision Blizzard) use the names "booster" or "set of cards", similar to collectable card games.

What is more, often loot boxes are issued by the game, for example, as a reward for moving to a new level or the successful completion of the network game. Also, players can receive them as part of promotions or any other events. Almost always, it is possible to buy loot boxes for real money or in-game currency. In some games, the loot box can be used immediately, in others an additional item is required for use, for example, a "key".

Loot boxes are used through the game interface, which decorates the opening process with visual and audio effects. The appearance of such interfaces may resemble roulette and slot machines. When a player runs out of loot boxes or keys, he is offered to buy them (Macey and Hamari, 2019).

Loot boxes may contain two types of an item – customization and item with an advantage. Customization in online video game is one of the most important components to have a comparative advantage since everybody wants to create a character as he is in real life or someone he or she has always wanted to be. It gives a role to play to the whole atmosphere of a game so a player can customize his or her character as he wants. Those loot boxes are usually can be purchased for real money, but also one can get it just playing a game and winning some tournaments what are becoming

more popular with the rise of the cybersport in the world, especially in China and South Korea, where it is a profession and career on a governmental level.

Most of the games having just customization are attractive to children. Many games are built just to get the attention of children by its bright colours, references to a pop-culture (movies, comics and other video games). The best example of a game that has customization loot boxes that play a significant role in developing a game is Overwatch (Activision Blizzard). This game has a specific type of customization where a player cannot buy an item that he wants, he or she has to buy a loot box to have a chance to get it. The opposite from it is the game DOTA 2 (Valve), where the player is able to buy any item that he wants or real money or get it randomly with a small chance after any round.

The work of Liao et al (2019) demonstrates and underlines the importance of customization in online video games, especially ones using the free-to-play model. This can help to be attractive for all ages, genders, citizenship, education, annual income etc. In other words, this is a way for a player to be special and somehow to get attention from other players within a game.

Another important aspect is the items bringing the advantage to a game, such as rare weapons and armour. One of the best examples is Warface (Crytek Kyiv) where people are forced to buy loot boxes with rare items to get an advantage since almost everybody uses this system to be a better player.

The challenge and competition in the online video game the best way to be attractive to players who are interested in player versus player matches. The main aim of all these rounds is to be the best, it does not matter if the game is cooperative or solo, usually, games have different regimes from player versus computer (players fight together against the computer) or player versus a player that is more popular than the first one. Usually, there are different regimes to choose in one game, and more rarely there is a regime where you can combine player versus player and player versus computer that was perfectly presented in a game Titanfall by the American company (Respawn Entertainment).

Most online video games are aimed for player versus a player system where players can challenge each other and find out who is the best in different conditions. Players like challenging in the games due to their unpredictable outcomes as many actions are happening during the battle.

As it was perfectly demonstrated in the research of Sepehr and Head (2018), one can say that competition has crucial and maybe even the main motivator to play in online video games for players. It also has a significant effect on satisfaction when after player's attempts he or she gets the

victory. As it has been emphasized before, the loot boxes can contain items to improve the character's ability or contain rare weapons and armour that are available only in loot boxes. On the one hand, it causes the disbalance in a game so players will be not in equal conditions and it leads to dissatisfaction of one who has not bought the loot boxes. On another hand, the professional gamer or skilled one may be interested to play without rare items against those who have it, so the match will be more challenging and both gamers are satisfied with the current situation. And what is more, and not so obvious, it can oppositely lead to a balanced game in some rare cases when a player has some problems with health so he or she has a slower reaction, or just simply a bad computer that badly affects gamer's success in a game.

This figure presented by Tsiotsou (2006) demonstrates the connection between satisfaction and purchase intention, why and how people get the intention to buy almost any product. In addition to how this intention is connected to the quality of a game. The same figure can be interpreted in the loot boxes sphere. Even though most gave having them are losing the total score on the dating site where gamers and critics can leave their short or long reviews and give to the game overall mark for example Metacritic.

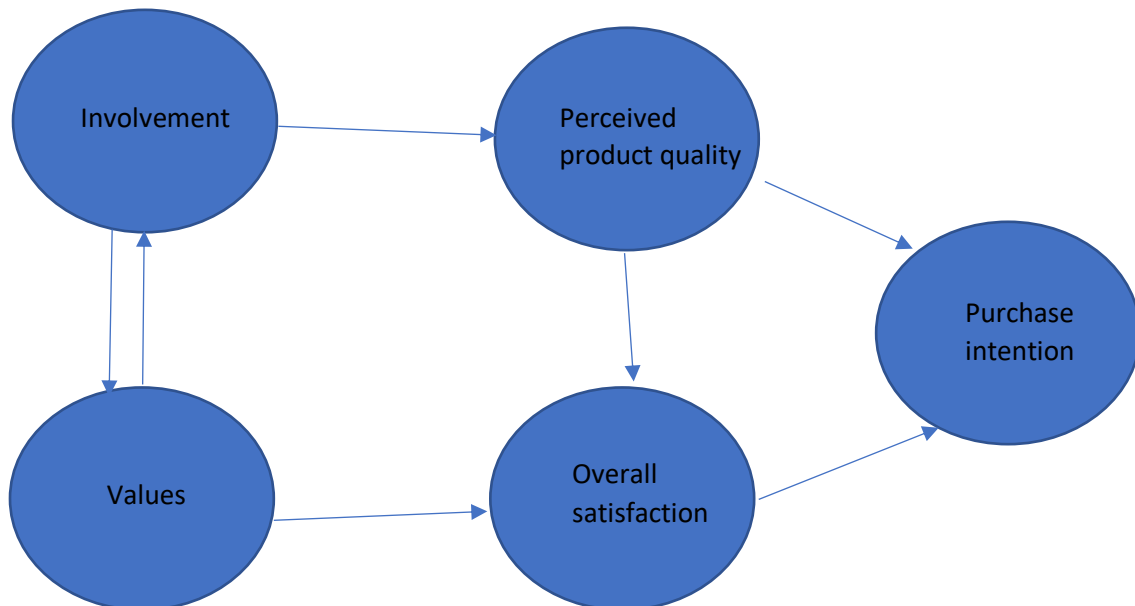


Figure 2. Purchase intention and its component
Referring to Tsiotsou (2006).

Involvement and values are connected during the deciding of buying a loot box. A person knows that he or she has a small chance to get a very rare item that almost nobody has, the same in gambling a person worries and wants to receive something special. That is why the involvement is so important, every second when the loot box is opening can influence on a player and his emotions.

Values have a connection with overall satisfaction because if a person wins a rare item overall satisfaction may be high and a person knows that. This especially works when a person does not get anything at all for a long time and finally gets his price after long fails and tries. Values also affect overall satisfaction because this item can be something that could bring an advantage to a player like a stronger weapon and armour, or faster car, for example.

Involvement can influence perceived product quality. Perceived product quality may have two meaning. Quality of a product as a game, and quality of a product as an item in a loot box. If the game is bad and even if a person gets some rare item there is no satisfaction in it because he or she will not play this game so will not use this item. In the end, this item is totally useful. The second variant as the quality of an item in the loot box, a person always waits that something rare will appear on his or her screen.

All these factors build the purchase intention of any loot box. This is only one of the way how to describe the purchase intention of loot boxes in the online game.

1.2.3 Loot boxes in different types of online video games

There are many game developing companies who try to get the attention of a customer by using comparative advantage. Some of them have significant budgeting from investors and even from players, using the early access model or crowdfunding system. The most popular business model, for now, is free-to-play model.

Free-to-play a monetization system and a way to distribute computer games. It allows the user to play without obligatory payment of funds. An ideal implementation of F2P happens when both the players are satisfied, and the developers get their money for further development and existence. Four types of monetization of games (and products) are common: free games, paid games, freemium.

Many free games provide cash to players who require gaming benefits in a faster way. Often, in-game purchases use game currency, with non-trivial rules for converting from real money (for example, discounts when exchanging a large amount). Free games can involve players in unnecessary cash spending.

The Freemium model also appeared - a model of free distribution of the "free" version. Sometimes the concepts of Free-to-play and Freemium are confused. Pay for the game, when players must pay for a certain amount to access the full version of the game (for example, Warhammer Online, EverQuest, World of Warcraft). The free-to-play model is often used by MMORPG developers and is the answer to widespread use on the Internet. Internet games were often used in Internet cafes.

Free-to-win (F2W) - this concept was first widely used by Wargaming in the game World of Tanks. According to the company, this model is an improved version of free-to-play, built on the principle of providing equal gaming opportunities to all users of shareware online video games, in which investing real money does not give the advantage of some players over others: the player's effectiveness is determined only his ability to play. Microtransactions allow you to play more comfortably: pass the game faster, gain experience, get more game currency for the same actions, change the look and so on. Players supporting the game through donation use purchased currency (gold) to save game currency (silver) and purchase it and perform other actions.

In 2013, Valve closed the last game difference between paying and free in Team Fortress 2 - the total effect of the sets disappeared (at least one of the accessories is available only to those who paid). In DOTA 2, as well as in Counter-Strike: Global Offensive, only cosmetic improvements are bought.

A second most popular business model relating to the online video games is a standard pay-to-play game. This model is necessary for a single game, but online games are also frequently pay-to-play. The advantage of these modes was that developers usually will not try to sell something in the game as loot boxes or any other donations because the player has already paid the price.

After releasing Overwatch (Activision Blizzard), the game that uses the pay-to-play model and also has loot boxes, where the only way to customize a character is with help of loot boxes. They can be gifted for games or some achievements in the game, or what is easier, to be bought for real money. A person cannot customize his or her character just buying. It is available only through random loot boxes.

The reason for studying this subject has been caused because of two special phenomena in the online video games sphere. These phenomena are Star Wars: Battlefront II by EA and HeartStone by Activision Blizzard. These two games are opposite as well as their situations.

HeartStone is the first online card game where two opponents try to destroy the heart of the enemy. The whole conception of a game is based on player's cards which they have to collect in anyways and then by combining it to achieve high results. The player can get those cards by opening loot boxes only. In conclusion, players have to get as many these loot boxes as they can to become a

decent opponent. The success of a player strongly connected on his cards. At first, it has to push for negative review and performance of a game, but this game uses the Free-to-Play system. This softens the situation. What is more, HeartStone is one of the best games in cybersport where professional players around the world can compete with each other for a big amount of money. The prize funds vary from 500 000 dollars to 5 million dollars per tournament.

At the same time, Star Wars: Battlefront II by EA game being a pay-to-play game with price in 60-80 US dollars during the first month of its release shows the opposite performance. People still have to pay for access to some special heroes, weapons, armours, planes etc, which gives an advantage in a game. Usually, games allow unlocking such features just through playing the game and achieving some goals. The same can be performed in the Star Wars: Battlefront 2, but the progress is too slow, and many useful items have a too-small chance of dropping. That is probably was used to force players for buying the loot boxes for real money.

It is not hard to confirm this information. The most disliked comment on Reddit (a popular forum for discussing many subjects) is EA's response on a gamer's complaint about the game. The consumer wrote "Seriously? I paid 80\$ to have Vader locked?" which means that 80 dollars game has many contents locked (Zendle et al, 2019).

The EA has responded to him "The intent is to provide players with a sense of pride and accomplishment for unlocking different heroes. As for cost, the research selected initial values based upon data from the Open Beta and other adjustments made to milestone rewards before launch. Among other things, we're looking at average per-player credit earn rates daily, and we'll be making constant adjustments to ensure that players have challenges that are compelling, rewarding, and of course attainable via gameplay. One appreciates the candid feedback, and the passion the community has put forth around the current topics here on Reddit, our forums and across numerous social media outlets. Our team will continue to make changes and monitor community feedback and update everyone as soon and as often as we can." Briefly speaking, EA company has made a research where they are saying that was players' wish to have such a system in the already pay-to-play game, what is nonsense. In the end, the amount of dislikes under the answer has shown who was right (EA Receives Guinness World Record for Most Downvoted Comment in History, 2019; EA's Consumer Rebellion, 2018).

1.2.4 Battle Pass

Battle Pass is a cumulative system that gives the player additional content for completing gameplay tasks. Typically, this content is purely cosmetic and does not affect the balance of the game.

Each development company implements the battle pass in its way, integrating additional mechanics. Sometimes companies introduce their own names: Rocket Pass, Event Pass, Compendium. The Battle Pass can be provided to users on a paid or free basis.

Progress within a battle pass is usually divided into tiers (stages). Achievement of this or that shooting gallery gives a reward. To open shooting galleries, you need to gain a certain amount of local experience, which is relevant only inside the battle pass and has no value outside of it.

The player earns this local experience by completing special challenges as part of the core gameplay. For example, for completing tasks like “play a match with a specific weapon” or “kill 15 opponents”.

In addition to unlocking stages in a similar way, you can also buy battle pass experience for the money. This speeds up the progress of the shooting gallery saves time and effort for players.

Battle pass progress is limited and limited by seasons or special events. If the player does not manage to open all the tiers before the end of the battle pass, he will not receive the full set of rewards. This exclusivity of content encourages people to either play a lot or pay to accelerate progress.

In a very primitive way, a battle pass is simply giving the player large rewards for activities that the player will be performing anyway.

The unique battle pass is made by the transparency of rewards and two progress paths: for those who play and for those who do not.

Battle Pass is a content distribution system for in-game events, which today are commonly called seasons.

The progress inside the battle pass is divided into levels. To reach each level, the player must gain a certain number of battle points - experience inside the battle pass. During the season, points are usually awarded for almost any game session, as well as for event quests. Reaching any level/stage of the battle pass is rewarded with game content that does not affect the gameplay - usually, these are customization elements.

It is generally accepted that the classic battle pass works like this:

- the event starts;
- the user buys access to the battle pass;
- the user plays and progresses through the battle pass.

Seasonal progress is displayed on the appropriate scale. The further the player moves along it, the more rewards he will receive.

Another important part of the mechanics is the purchase of levels. To get the maximum skip level, you need to play a lot, so you can buy more levels.

The battle pass mechanics are not new. It appeared back in 2013 in Dota 2. Then it began to actively spread among other major publishers. In particular, Epic Games introduced it in one of the biggest hits of recent years - Fortnite.

The popularity of the mechanics is growing thanks to large competitive titles with colossal online and income. An important factor in its popularity is its mildness in terms of monetization, as opposed to the scandalous loot boxes in 2017-2018.

Researchers reckon that the prevalence of the battle pass will only grow for the foreseeable future.

The battle pass is common mainly in Dota clones and competitive shooters.

The battle pass is common in many competitive games today. This mechanic is found in almost all battle royale, a number of shooters and MOBA games.

It all started with Dota 2, in which Valve introduced battle passes four years ago and has been experimenting with mechanics all this time. Other developers of free-to-play games have long been afraid to borrow a battle pass because it is essentially a paid event in which a non-paying player cannot participate in any way, which would obviously cause outrage among the audience.

Fortnite changed the situation dramatically, where Epic Games heavily reworked the battle pass.

First of all, they removed a lot of additional mechanics that made the format complicated: an infinite number of levels, daily quests, gacha, seasonal content. But the biggest change is opening up Battle Pass rewards for everyone and introducing a free, simplified version of it. In Fortnite, the player gains Battle Pass levels even if they haven't paid for it. He sees the rewards he earned in the game, but cannot receive them until he pays. The player gets the feeling that the awards are already in his hands, he just needs to buy a pass and pick them up.

Another change is a free, simplified Battle Pass for all players. With it, those who did not pay for the pass also receive awards: there is a parallel line of awards available to everyone. The rewards in this free line are much less valuable, and players receive them once every five levels, and not for each level, as in the paid pass.

These two mechanics work well for each other: the free battle pass plays the role of ugly brother and from time to time (every five levels) reminds the user that he has already earned many rewards in the paid pass, which only need to be collected by purchasing a ticket.

- Wide availability: both paying and non-paying users can get rewards - you can pay for progress or achieve success by actively playing;
- there is a direct relationship: players clearly understand what they need to do and what the reward will be;
- loyalty from the community: cosmetic rewards usually do not generate negativity or accusations of a pay-to-win scheme, since they do not affect the balance;
- increased engagement: the mechanics add more meaning to the central gameplay by adding goals;
- increase in conversion: motivates the player to buy through the exclusivity and limited supply;
- encourages the player by providing rewards as a nice bonus, even if he is not interested in purposefully farming them with the available battle pass.

The battle pass has many advantages.

1) This is a considerable conversion payment. The difference between a free and a paid battle pass is huge, the mechanics themselves and the UI perfectly highlight this difference. The player sees how much of the already earned content he will receive by simply purchasing access.

2) Battle Pass works great for keeping paying audience. The players who bought it have a very strong Fear of Missing Out feeling. They understand that the Battle Pass is just an admission ticket: in order to pay for it, you need to get a high pass level, which means you need to play a lot.

3) The press and players love the battle pass for its transparent reward system. It looks especially advantageous against the background of loot boxes. Players and the press are tired of loot boxes and are excited about the new way to get content. The Battle Pass makes the rules for obtaining content in the game extremely clear and transparent for the player, completely excluding randomness from them. Therefore, payment for a battle pass in a number of games is already perceived as fair gratitude to the developer for a pleasant experience.

4) This is a great tool to build a metagame in competitive games with active gameplay, as a battle pass gives a visual sense of progress. For a long time playing Dota 2 / Fortnite / Paladins / PUBG without a battle, the pass is boring: games consist of only battles, a serious part of which the user loses. The rating system is not available everywhere, and it is far from ideal for showing a player's progress. And the battle pass provides both a sense of growth and satisfaction from achieving

additional goals, and in addition, it rewards failure and thereby combats the frustration that is inevitable in competitive games.

5) The Battle Pass is monetized well with additional standard tools. If there is a mechanic that monetizes the core gameplay, then it is profitable for the player to pay within the framework of the past, because this will speed up the passage of the season, which means that he will receive all the prizes faster.

6) Battle Pass sets the pace of seasonality and regularity of the game. This, on the one hand, teaches players, binds them to the game, and on the other hand, it allows the developer to predict the volume of work and sales.

There are cons definitely:

Frustration or a drop in the player's motivation is possible in the event that the open battle pass is not completed and some of the rewards are lost due to tight deadlines, lack of skill or funds.

Monetization mechanics are softer, which means that business metrics may be lower; Generally speaking, selling only cosmetic items usually translates into lower income than selling "power" - things that give an advantage in the gameplay and affect the balance (important - there are exceptions).

A laborious development process - it is necessary to produce content, calculate its opening by shooting gallery, think over the rules for accruing experience, create game tasks that are balanced in complexity and involvement, not to mention implementation at the code level.

1.3. Problems with microtransactions and loot boxes

If a certain system can be used to trick children into spending thousands of dollars, then it is probably not the most ethical system.

Today one will not say that microtransactions have a negative effect. It is not possible to call them bad by its nature. "Bad" is generally too loud a word in this case. Cliff Bleszinski has already done a considerable job defending microtransactions, which has sparked a lengthy discussion. However, the free model is definitely not the most ideal at the moment, an example of which is the case when a five-year-old child spent \$ 2500 from his parent's card to play *Zombies vs Ninja*. And he is not alone, such cases occur with enviable regularity. So, Apple had to negotiate a class suit filed by parents who believed that their children were being exploited by such games. But who is to blame? Parents who give their kids an iTunes password so they can play with cute toys. It is doubtful and unlikely.

What if it is difficult for a child or even a teenager to control his impulse and every minute desire. The result can be hundreds of dollars withdrawn from the parent's account to pay. The bottom line is that many parents trust their children and give them their own cards for some emergency cases. One case says that only parents are supposed to be wrong. What should they do after their child could not resist and spent a couple of hundred on virtual objects? That was given the policy of no return, parents have to deal with this situation and pay the bill? At the same time, the child loses the trust of his parents.

The basis of the problem lies in the fact that many games are created in such a way that they can be regarded as machines that exploit the human impulse to continue playing. They attract you with a free trial, and then they drag you into the abyss of microtransactions, and at the end of the month, you get crazy card debt. Many people may recall old slot machines or in different words - gambling.

There are so many casual gamers today who are obsessed with Candy Crush Saga. This is a simple game of matching elements, where the player has a goal that varies from level to level. For many people or even core gamers, this is still not a game but just a time killer. However, casual players spend much time playing such types of games. By the 30-40th level in the game, a player starts having an addiction and begins to drain money. It even has the trick that the player gets a power boost (the thing that may give you valuable items or features), but when you try to use it, it requires payment. Many people stop realizing that this is an end, but at the same time, there will always be a percentage of players who are ready to drop hundreds of dollars just for a couple of lines of code, allowing them not to wait a minute and a half and immediately start a new level. Researches describe the problem of gambling as "the desire to constantly place bets despite negative consequences or the desire to stop." But when one plays such games he or she does not feel any negative consequences. People are not forced to pay money for this, but their thoughts are convincing them to donate (pay money) to buy a booster that will allow them to play better. There are huge problems when people do not have self-control and have problems with avoiding unnecessary spending.

But what is even worse - if gambling is available only after adulthood, then free games are available to children of any age. And many children just ignore the fact that game is only for people who are over 18.

This system is created in such a way as to exploit people with certain character traits, as it has been already found out - with weak self-control. Who does have this trait manifested weaknesses at most? Of course, they are children, especially when all the conditions are so ideally matched.

Naturally, it is ultimately up to the parents to look after the children and what they play. One can even become a devil's advocate and claim that accusing game creators of someone spending too much is like accusing game developers of making violent games that kids can access in one way or another.

The fact is that there have been cases that even adult people were causing themselves and their families serious harm, throwing hundreds of dollars into the free-to-play games' developers. The "old" game design models rewarded skilful players with progress. Free-to-play, with their microtransactions, replaced the time it took to gain level and skill, selling it all for real money, essentially cheating the program itself. The problem is not with children or parents unable to look after them - the problem is with designers deliberately exploiting human and system weaknesses (Are loot boxes gambling? 2020)

The second most important problem connected with loot boxes and microtransactions at all is the problem of balance. The developers do not just add the loot boxes in a game. Their main point is to make the customers purchase the loot box with any consequences. There are dozens of examples demonstrating how loot boxes that effect in-game balance may affect the whole customers' satisfaction.

Basically speaking, customers do not receive what they should have had from the very beginning, but they receive it with additional spending. What is more, this spending goes to the random chance that will decide what should a player get, some booster or for example a Christmas hat. Next crucial aspect of the whole balance is the fact that developers make the game harder than it is supposed to be. This is how they push people to buy the loot box.

Over the past few years, microtransactions have increasingly appeared in big-budget games as developers realized they had huge potential for profit. This system is justified in shareware games, where microtransactions are the only source of income for the creator of the project. A considerable example is Dota 2, in which microtransactions are needed solely for cosmetic changes to various characters, while the game itself, as well as all the heroes in it, is completely free for gamers.

However, microtransactions raise a lot of questions if they are found in large projects that already sell for large sums. The researchers have already come to terms with various bonuses available only when pre-ordering, seasonal passes, dubious downloadable content, content cut from the main game, which is later sold in the format of these same downloadable content, and much more. Long gone are the days when it was enough to spend once on a game and get a full-fledged product in return.

Of course, this is not a minus in all cases. Additional content to play on your own can be a really considerable excuse to fork out. CD Project Red's *The Witcher 3*, for example, whose expansion packs are considered exemplary. But, unfortunately, among AAA projects, such examples can be counted on one hand.

These days, in order to experience everything that is included in the game, the average gamer will have to spend not only the conditional \$ 60 on the project itself, but also invest the same amount in the purchase of a season pass in order to download portions of additional content on time. Often, developers deliberately cut out important parts from the game only in order to subsequently sell them to the owners of Season Pass, and this in itself is a way of monetizing. And this, sadly, has already become the norm for the gaming industry.

One of the last scandals connected to loot boxes and microtransaction was connected with *Middle-earth: Shadow of War*. There were loot boxes that need to be bought for real money (and this despite the fact that the game itself is pay to play), but since then the game has changed many times due to the strong critics coming from the players themselves. The problem is that people bought some in-game units for real money that would run away from the player. So people were buying things that will just disappear in time. It was briefly mentioned this issue, moving on to a more general topic, but looking at the actions of Warner Bros. demonstrating what the modern AAA gaming industry has become because of loot boxes, many people start realizing the problem looking at the reviews of games.

Microtransactions in paid big-budget projects like *Shadow of War* or *Destiny 2* (or any other AAA game) are extra payments to people who have already spent \$ 80 just to play them. Because of these microtransactions, the game people are purchasing is essentially a raw product lacking many small pieces. And these pieces are pinched off only to justify in-game purchases for real money.

However, as a result of such operations, developers are most affected. Generally, people who create video games do not think about paid content. Most game creators just want to present to the public a really considerable and memorable game. But when a publisher requires microtransactions to be embedded in it, it complicates the process noticeably.

The first issue is balance. A game that has been worked on for many years, based on a specific vision of the final product, suddenly gets an additional element that needs to be embedded in it so that it does not look foreign. Developers need to understand how this element affects gameplay and try to change the balance. Of course, this destroys their original vision of the game and forces them to change the very essence of the game in order to adapt to the requirements of publishers who want to see paid content in the project.

Moreover, microtransactions have come to the point where you can pay for "privileges" associated with skipping certain moments of the game, voluntarily reducing the duration of the passage. That is, the original idea of the creators is already completely ignored, because players can access later stages or items for money without wasting time. At the same time, the feeling that you really achieved something in the game and deserved a reward is lost.

This is what devalues a game in which you can just buy whatever players want. By allowing players to buy items that need to be unlocked during a playthrough, they are effectively declaring that the game is not worth it. People pay for the opportunity not to play what the creators have been working on for several years, and it turns out that the results of their work are not worth attention in public opinion. Researchers have no other explanation for these paid "passes" of stages; the publisher simply tells player that the game he or she spent their money on is not worth spending their time on.

But there are also loot boxes, which many have criticized even in shareware games. And to justify this practice in paid games is completely impossible. At the heart of the loot box system itself is randomness, that is, players never know what awaits you in the next box. In other words, having paid real money for the opportunity to open a case, you enter into a gambling game in the virtual space, and the prize in this game may turn out to be a thing that you absolutely do not need.

For example, *Shadow of War* sells orcs to gamers that they would have encountered anyway during the passage and whom they would have conquered. Of course, it doesn't sell directly for real money. *Shadow of War* has an in-game premium currency that is used to buy loot boxes and other content, but this is done in order to hide the real cost of certain items from players.

Shadow of War is one of many games that use this trick. For example, *Deus Ex: Mankind Divided* went through a series of microtransactions that appeared in the game at the behest of publisher Square Enix, which hurt both players and developers; or one can recall *Dead Space 3*, in which gamers were offered to purchase in-game items for real currency - EA explained this by the fact that in this way the company wanted to make the project more attractive for those who are used to playing on mobile platforms (but the fact is that most mobile games with microtransactions are distributed on a shareware basis).

Some people try to justify the presence of microtransactions in AAA projects, saying that this is just optional content that does not affect the game itself; and that you can access it during the passage. But this is a very weak defence of a terrible practice. If these were true, if this content didn't really affect the perception of the game, then not many people can understand its aim. Justifying microtransactions at all when, as publishers assure, they are just harmless elements is hard to believe.

After all, it is obvious that any part of the game, no matter how insignificant it may seem, affects the game itself.

This research is not the first that raises the question of loot boxes and their affection on satisfaction and loyalty. There have already been hundreds of discussions that the direction the industry is heading is noticeably detrimental to the quality of the games gamers play. Nevertheless, many consider this phenomenon to be relatively harmless across the industry, and the other researchers would agree with them a few years ago, when developers were just starting to release additional content, using it as an excuse to draw attention to an already forgotten project.

However, it has long passed this period, and for now, developers and publishers are actively experimenting in an attempt to find new ways to get money out of customers, what is the concept of all businesses. It all started with simple downloadable content, but nowadays one game can contain a number of paid downloadable content (both story and gameplay), in-game microtransactions, several special editions, sequels with paid content that was available in the original from the very beginning, and of course the loot boxes are complete with keys to open these loot boxes.

All this is necessary for publishers in order to understand to what extent the level of monetization of large-budget projects can be brought without angering the gaming community. Apparently, no one has yet reached these limits, even though the situation is getting worse every year.

But what is most annoying is the realization that each of these techniques can be done more naturally without devaluing the game or offending gamers who decide to buy it.

Many people can be disappointed due to these facts that the value of the projects they expect decreases with each subsequent news about them. For example, some people could not buy *Shadow of War* right after its announcement, but after a while, they decided to wait for the release in which all the content would be collected, and their decision was influenced not by the quality of the game, but solely by the policy of Warner Bros and loot boxes themselves.

Most researchers reckon the situation will change in the foreseeable future since publishers will not voluntarily give up profitable practices. Moreover, as some reviews say people no longer trust any publisher of AAA projects, and therefore some of them will not pre-order AAA games.

As the research mentioned earlier, this is not the case for all publishers. CD Project Red's *Witcher III* policy has been truly outstanding - regular releases of new free content and unparalleled downloadable content games should set an example for the entire industry; It is worth noting Nintendo, which in most cases produces full-fledged games and downloadable contents that look like an addition to the main course, and not part of this product.

In contrast to such companies, there is Activision, which is releasing an updated version of Call of Duty: Modern Warfare with the sole purpose of selling a new part of the series, or Warner Bros., using people desires and their wishes to play as the most famous characters in this universe as an excuse to sell downloadable content with one character, all income from which until the end of 2019 will go to charity. Profits from this downloadable content, which go to charity, are taken into account only from sales in the United States. If a person buys an add-on in any other country, then the money goes into the pockets of the publishers.

Such actions on the part of large publishers lead to the fact that their largest projects are devalued in the eyes of the public. And this is nothing new. People have already been sold partially complete and intentionally gutted games this year, and as long as people take that for granted, this will continue. And publishers will continue to experiment in an attempt to find the very way beyond which they will face universal censure.

There is a tendency in which people start feeling differently for AAA because of these strategies that companies implement. Moreover, it may negatively affect on the gamers' satisfaction and loyalty (Middle-earth: Shadow of War ripping out microtransactions and loot boxes, 2020)

2. METHODOLOGY FOR RESEARCH IMPACT OF LOOT BOXES ON CUSTOMER SATISFACTION AND LOYALTY IN ONLINE VIDEO GAMES

2.1 Research module

The main question and problem studied in this research are:

- To study the impact of loot boxes on satisfaction and loyalty in online games.
- To study how the different types of loot boxes (customization and giving an advantage) may impact loyalty and satisfaction in online games.

• To study how loot boxes may impact satisfaction and loyalty in different types of online games (subscription model, free-to-play, pay-to-play)

The research module based on loyalty and satisfaction has in common a factor that they use surveys to study a problem. This concrete research work uses the same approach.

The methodology of research:

- Object selection.
- Hypothesizes formation
- To define methods were used in previous researches to identify the methodology for this work.
- To choose the target audience.
- Sample selection.
- Data collection.
- The setting of Online Survey.
- To choose a strategy for data analyzing.

Hypothesis

This study is going to use such hypothesizes and approaches to reach its aims

H1 – Loot boxes with customization have a considerable impact on loyalty.

H2 – Loot boxes with customization have a considerable impact on satisfaction.

H3 – Loot boxes with advantage items have a considerable impact on customer loyalty.

H4 – Loot boxes with advantage items have a considerable impact on customer satisfaction.

H5 - Satisfaction has an impact on loyalty in games.

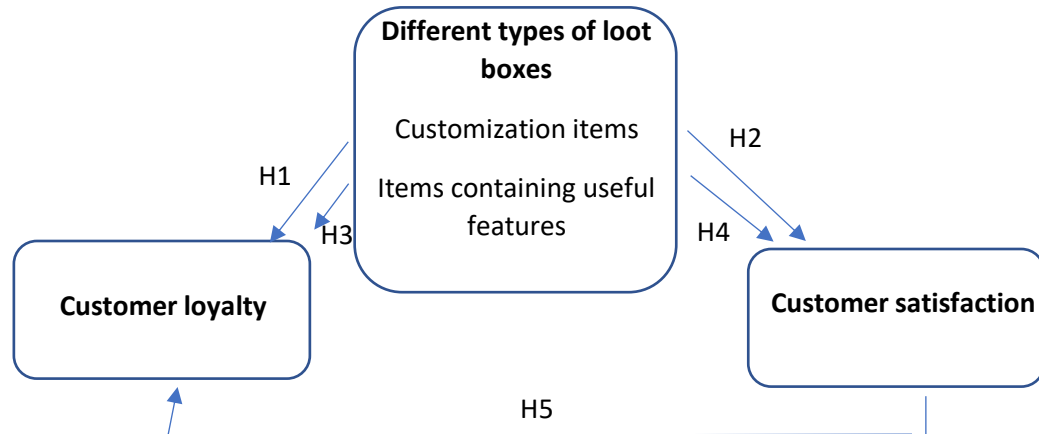


Figure 3. Hypothesis used in the study

Compiled by the author

Previous researchers' methods

One of the best ways to do scientific research is a survey. Due to some reasons, the researchers decided to do the survey in-personal. They were able to have much control over people while they are looking for participants. The surveys were made in different places from universities to game dedicated places as MMORPG cafes. The researchers decided to divide participants by two equal groups – males and females. Afterward, the researcher decided to use SPSS to analyse all received data from participants. The analysis of variance was included to demonstrate the differences between males' and females' answers. Then a multivariate analysis of variance was included to differ answers made by all 7 sub-components at the end (Balakrishnan, J., & Griffiths, 2018).

The object of studying is new and unique. There are not many types of research made on this object. There is not much research made on satisfaction and loyalty connected to different types of loot boxes in different types of online games.

Even for such research with a similar subject, for example, as Li and Nower (2018), Zendle and Cairns (2018) use different types of surveys from online to in-personal and emails. Used Likert scale is differing from 5-7. For data analysing researchers use regression analysis and SPSS.

2.2 Research object description

In today's world, video game creation is one of the most significant segments of the entertainment industry. The scale of the game industry is comparable to, for example, the film industry. And the video game industry has outpaced it in growth rates over the past five years.

In terms of influence on consumers and their involvement in the interactive environment offered by video games, this segment has long stood out from other forms of entertainment.

Game development or games cannot be viewed in isolation from the computer games industry as a whole. The actual creation of games is only part of a complex "ecosystem" that provides a full life cycle for the production, distribution and use of complex products like computer games.

In the industry of the modern game industry, the following levels can be defined: platform, game engines, video game development, publishing and operating, popularization and consumption.

A very small number of educational institutions in the world prepare professionally directly for the gaming industry.

Table 1. Biggest game development companies

Company name	Date of establishment	Number of staff	Revenue for 2019
Sony Interactive	1993	3025	\$13.4 billion
Xbox Game studios	2000	5321	\$12.82 billion
Nintendo	1889	5944	\$6.28 billion
SEGA	1940	5349	\$4.9 billion
Activision Blizzard	2008	9000	\$4.85 billion

Source: The 50 Top Video Game Design Companies in The World

As one can see from the table number 1, there are companies with high revenue for 2019th year. There are two Japanese companies and three Americans companies that dominate the market. Moreover, no one can say that they are monopolist due to the lots of companies presented on the world arena of game development sphere.

The environment of game development is truly fascinating. One can create a company out of nothing with almost zero budget. The only thing that is necessary is a PC because all games are made on it. Such developers with no funding are called Indie Developers (or Independent Developers). The name was given to such developers because AAA games (games with the incredible budget) are controlled not by developers but managers. They usually see no creative aspects of a game; they usually are aimed at the income. This is one of the premises why loot boxes have appeared in the game developing sphere. The indie developers have no annual reports so that is not possible to know their actual income on any project. It becomes possible only after they announce the information themselves.

There are platforms that allow a user to play a game:

- Personal computers based on Windows, Mac / OS X or Linux
- Game consoles (specialized devices for games, currently in use 8th generation - Xbox One, PlayStation 4, Nintendo Wii U)
- Mobile devices (iOS, Android, Windows)
- Universal web platforms, social networks (FB, VK, MM)
- Arcade machines
- Innovative realities of virtual reality

The question of the degree work is to analyze the specific phenomenon in the specific area. So, the study will mostly use everything listed about expect of two last platforms.

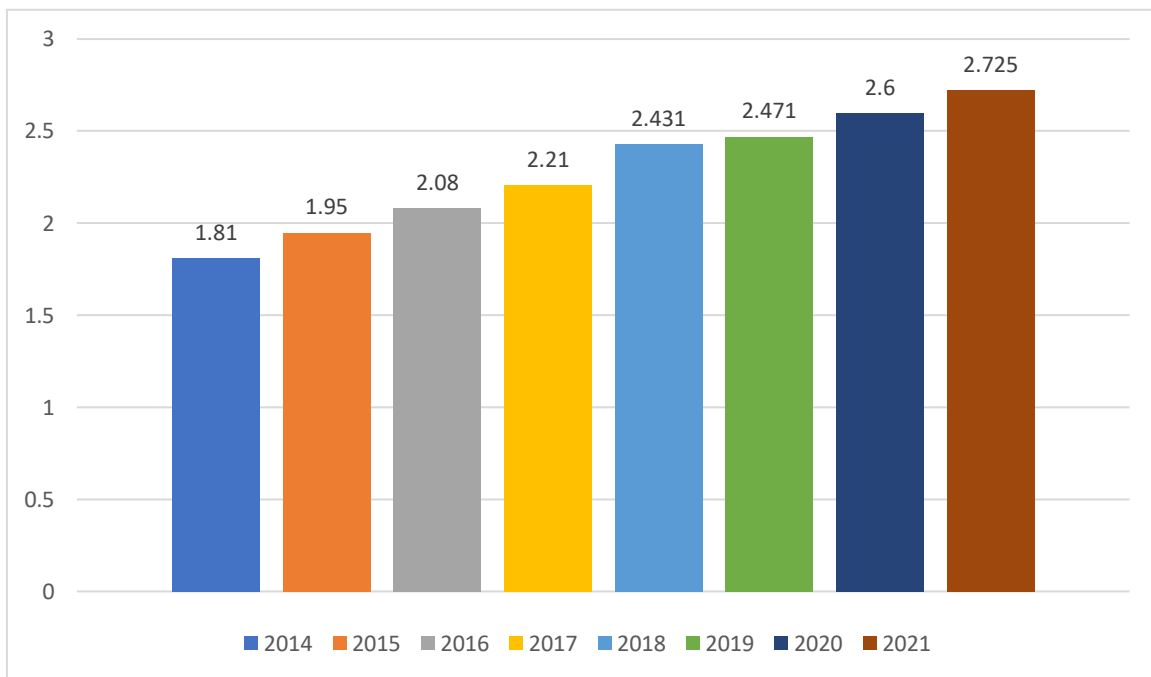


Figure. 4 The approximate number of gamers in billion from 2014-2021 years around the world

Source: Number of Gamers Worldwide 2020: Demographics, Statistics, and Predictions

According to the average data that nowadays games usually cost \$60-\$80 and one loot box may cost from \$1-\$250, the importance of this object cannot be ignored.

2.3. Explanation of used methodology

The target audience

The target audience for such type of question is way too crucial. If people that are not engaged or have no connection to the gaming sphere, they will not be able to give decent answers for the required questions. The target audience for this degree project will be online gamers from around the world with no limitations for age. The explanation of this choice is that online gamers around the world are actually similar. The age also does not influence anyhow on the loot box perception.

Sample selection.

Choosing how and which people will receive online surveys is another task to be done in this research work. The method of sample selection is Non-Probability Sampling Method - Convenience sampling. Due to the lack of the budget for this work, the research has to use this method. The method is based on the voluntary will of a people that take a survey. Also, the random sampling will not be useful at all. People not being the target audience may receive it as well.

The sample can help the research to reach the target opinions. People will be asked to take an online survey and send it to other people who are also online gamers. It may work due to the fact that there are not that many interesting questionnaires based on some disturbing or exiting aspects. In addition, popular sites, YouTube channels, Instagram accounts may be asked to advertise the survey for free, due to its uniqueness and importance of a question.

Data collection

Data will be collected with the help of online surveys. Logically proved because the subject of research is the impact of loot boxes on *online* players' satisfaction and loyalty. Moreover, surveys are often used to measure loyalty and satisfaction.

In addition, for data collection will be used Google Forms, due to its flexibility and easiness of usage. There were some suspicious that many people from Asia will not be able to take a survey because of blocked sites. For example, Google is blocked in China. Though, people use legal VPNs to use international sites.

The setting of an online survey

The main aspect of the survey is to understand the participant thought on any subject. In order to do it, the Likert Scale (1-5) will be presented in a survey. Where 1 is the lowest point (negative) and 5 is the highest (positive). The variants of the answers will vary from the stated question:

Table 2. Survey answers based on Likert Scale

Scale	Agreement	Agreement (2)	Opinion
1	Strongly disagree	Definitely no	Highly negative
2	Disagree	Rather no, than yes	Negative
3	Neither agree nor disagree	No idea	Neither positive nor negative
4	Agree	Rather yes, than no	Positive
5	Strongly agree	Definitely yes	Highly positive

Complied by the author

The online survey will consist of 23 questions. The long surveys nowadays have a tendency to afraid the participant with its length. Only surveys that allow taking a prize for the participants may be big. Expected finishing time is 5-15 minutes for each user. Also, 15 questions out of 23 have a direct answer to the questions asked in the hypothesis. 7 of them will identify if a user is from the target audience and will find out their age, income if they bought a loot box for real money and how many have they spent on loot boxes. The questions about financial status will be optional to answer.

The questions will be connected to each hypothesis in this way:

Table 3. Hypothesizes based on question in survey

Hypothesizes	Questions
H1	4, 8
H2	6, 2, 9, 13
H3	5, 10, 12
H4	7, 3, 11
H5	14, 15

Complied by the author

The Hypothesis from 3-11 will be based on single questions. H1 will have 3 questions and H2 will have 2 questions. While analyzing answer for H1-2 the average got from the Likert Method will be calculated to find out if the Hypothesis are proven.

Data analyzing

For Data analyzing it regarding the fact that the degree study will use online survey for data collection, *Correlation* analysis and *Regression* analysis will be used. The SPSS will be used to resolve if the hypothesizes were resolved.

3. ANALYSIS AND RESEARCH RESULTS

3.1 Quantitative data

The survey had a question connected to the hypothesis:

L1 - You have a will to purchase a loot box while playing. Do you agree?

L2 – Do you have much desire to play after opening loot boxes with a customization effect?

L3 - Do you want to play more in a game when there are loot boxes with items that give an advantage?

L4 - You would continue playing a game that does not satisfy you anymore, but you do it for getting loot boxes with customizing items

L5 - You would continue playing a game that does not satisfy you anymore, but you do it to open loot boxes that give an advantage

L6 - You feel satisfied when opening a loot box with a customization effect

L7 - Do you enjoy opening loot boxes in a game that give advantages to a player?

L8 - Would you play a free-to-play game with customizing items received from loot boxes?

L9 - What is your opinion on loot boxes that have customization items in free-to-play games?

L10 - Do you play more in games with a subscription model if there are loot boxes that give an advantage?

L11 – Loot boxes with customizing effect may satisfy you in a subscription model game

L12 - You will play in more games by one developer if their pay-to-play games have loot boxes that give an advantage.

L13 - Pay-to-play games bring much satisfaction when they have loot boxes with customization.

L14 - If you are satisfied with a game, will you buy the next game by the same developers?

L15 - Would you keep playing a game with loot boxes that satisfy you?

As it has been predicted most of the participants of the survey are from the target audience. The first questions have been based in order to define if a person knows about online games and loot boxes.

Following questions helped to do it:

- Do you play online videogames?
- Have you ever played online games where loot boxes are presented?
- Have you ever opened a loot box in an online video game?

From all 81 participants, only 9 are not the target audience, that makes up 11,1%.

First question was to analyze the participants' age.

Table 4. Age of survey participants

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <10	9	11,1	11,1	11,1
>32	8	9,9	9,9	21,0
10-18	11	13,6	13,6	34,6
19-25	38	46,9	46,9	81,5
26-32	15	18,5	18,5	100,0
Total	81	100,0	100,0	

Complied by the author

The age was asked due to the age limitations of games. Each game has its own limitations. So, adults and children may have different point of view on loot boxes appearing in an online game. Though the main point of the degree work remains still.

Table 5. Answers on if players have any bought a loot box for real money

Have you ever bought a loot box for real money?	Yes - 44
	No - 37

Complied by the author

How it is possible to see from the table number 4, more people chose that they have bought a loot box in online game. The question was asked due to the fact that some loot boxes a player may receive for free. It strongly depends on a game.

As one can see from the last table 6 is that people usually spend less than 10 dollars each month. It can be explained with the fact that loot boxes may cost from 1-250 dollars in average. But, of course, there are cases where loot boxes may cost more than 500 for each. In that case empty slot is for those who answer to the fifth question “No” – people have bought no loot boxes for real money.

That can be explained that games give a chance to get loot boxes for virtual money for finishing some challenges, gaining achievements, or simply entering the game daily.

Table 6. How much money have people paid to buy a loot box last month?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	33	40,7	40,7	40,7
<\$10	20	24,7	24,7	65,4
>\$500	6	7,4	7,4	72,8
\$10-\$49	11	13,6	13,6	86,4
\$100-500	4	4,9	4,9	91,4
50\$-\$99	7	8,6	8,6	100,0
Total	81	100,0	100,0	

Complied by the author

From the next table (7) one can see how many hours per week participants play in online video games. Mostly, people play from 7-14 hours per week. To be precise there are 26 people (32.1%). There are only 9.9% of participant who play 14-28 hours per week.

Table 7. How many hours per week do participants play?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <2	16	19,8	19,8	19,8
>28	15	18,5	18,5	38,3
14-28	8	9,9	9,9	48,1
2-6 hour	16	19,8	19,8	67,9
7-14	26	32,1	32,1	100,0
Total	81	100,0	100,0	

Complied by the author

3.2 Correlation

The research will demonstrate the results of correlation.

Table 8. Correlation H1

		Q4	Q8
Q4	Pearson Correlation	1	,545**
	Sig. (2-tailed)		,000
	N	69	69
Q8	Pearson Correlation	,545**	1
	Sig. (2-tailed)	,000	
	N	69	69

** . Correlation is significant at the 0.01 level (2-tailed).

Complied by the author

As one can see on the table 8, correlation is in the middle (,545). Which demonstrates that there is obviously connection, and also strong.

Table 9. Correlation H2

		Q6	Q2	Q9	Q13
Q6	Pearson Correlation	1	,641**	,504**	,566**
	Sig. (2-tailed)		,000	,000	,000
	N	68	68	68	68
Q2	Pearson Correlation	,641**	1	,650**	,481**
	Sig. (2-tailed)	,000		,000	,000
	N	68	69	69	69
Q9	Pearson Correlation	,504**	,650**	1	,365**
	Sig. (2-tailed)	,000	,000		,002
	N	68	69	69	69
Q1	Pearson Correlation	,566**	,481**	,365**	1
3	Sig. (2-tailed)	,000	,000	,002	
	N	68	69	69	69

Complied by the author

Regarding H2, the table 9 can demonstrate the fact that Q9 and Q13 has almost weak connection (,365). But the rest of variable vary from ,481 to the ,650.

Table 10. Correlation H3

		Q5	Q10	Q12
Q5	Pearson Correlation	1	,569**	,628**
	Sig. (2-tailed)		,000	,000
	N	69	69	69
Q10	Pearson Correlation	,569**	1	,754**
	Sig. (2-tailed)	,000		,000
	N	69	69	69
Q12	Pearson Correlation	,628**	,754**	1
	Sig. (2-tailed)	,000	,000	
	N	69	69	69

** . Correlation is significant at the 0.01 level (2-tailed).

Complied by the author

Observing Table 10, one can notice that correlation is higher comparing to the previous tables. Q10 and Q12 even have ,754 that is close to 1.

Table 11. Correlation H4

		Q7	Q3	Q11
Q7	Pearson Correlation	1	,701**	,449**
	Sig. (2-tailed)		,000	,000
	N	69	67	69
Q3	Pearson Correlation	,701**	1	,441**
	Sig. (2-tailed)	,000		,000
	N	67	67	67
Q1	Pearson Correlation	,449**	,441**	1
	Sig. (2-tailed)	,000	,000	
	N	69	67	69

** . Correlation is significant at the 0.01 level (2-tailed).

Complied by the author

Table 11 shows to the research results lower than average and high ones. Q3 and Q7 have gotten also considerable connection due to its ,701 correlation.

Table 12. Correlation H5

		Q14	Q15
Q14	Pearson Correlation	1	,494**
	Sig. (2-tailed)		,000
	N	69	69
Q15	Pearson Correlation	,494**	1
	Sig. (2-tailed)	,000	
	N	69	69

** . Correlation is significant at the 0.01 level (2-tailed).

Complied by the author

Table 12 states that the connection between Q14 and Q15 are not significant but still usable.

As one can see from all the table from Table 8 to Table 11, summarizing the received data, it is possible to do the conclusion on correlation part.

Table 13. Summary of the correlation

Hypothesis	Conclusion
H1	It has significant connection
H2	It has significant connection
H3	It has significant connection
H4	It has significant connection
H5	It has significant connection

Complied by the author

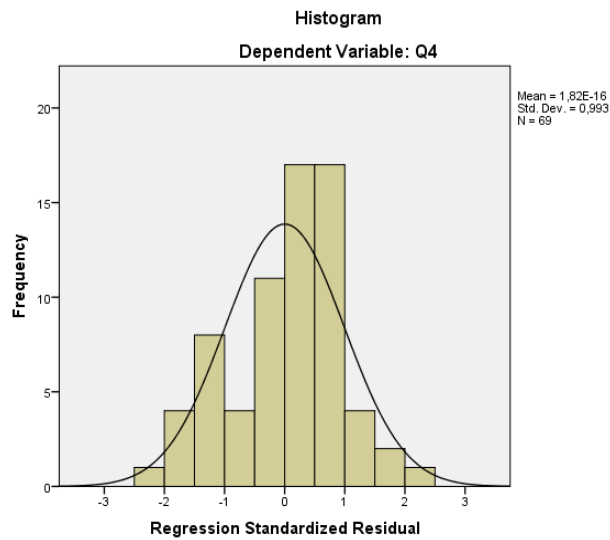
The research demonstrates from Table 13. That there is significant connection inside each hypothesis among variables. This demonstrates that the regression analysis can be implemented for studying, predicting and proving the given hypotheses. The next part is dedicated to regression analysis.

3.3. Regression analysis

This research will use Simple Linear Regression for hypothesis 1 and hypothesis 5, but for hypotheses H2-H4 Multiple Linear Regression.

The fifth figure is the histogram for the H1.

Figure 5. Regression analysis H1 – Histogram



Compiled by the author

On table fourteenth, the research shows that the regression equation looks like this: $H1 = 0,693 * Q8 + 0,509$. So for example, if a person’s answer for about playing a free-to-play game with customizing items received from loot boxes is rather agreed, than disagree (3-3.99), then the research can await that his or her opinion will change to 3,281 or rather agree, than disagree. So the statement will stay the same.

Table 14. Coefficients H1

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,509	,399		1,274	,206
	Q8	,693	,104	,613	6,682	,000

a. Dependent Variable: Q4

Compiled by the author

Table 15th demonstrates in this example, the measure of uncertainty is: $59.432/157.947 = 0.376$

Table 15. ANOVA H1

		ANOVA^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59,432	1	59,432	44,643	,000 ^b
	Residual	98,515	74	1,331		
	Total	157,947	75			

a. Dependent Variable: Q4

b. Predictors: (Constant), Q8

Complied by the author

As it is possible to see, the outcomes of the regression analysis is that Hypothesis 1 is proven. Loot boxes with customization have considerable impact on loyalty.

Table 16. Model Summary for H2.

Model Summary^d				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,668 ^a	,446	,438	,85160
2	,710 ^b	,504	,490	,81158
3	,735 ^c	,540	,521	,78650

a. Predictors: (Constant), Q2

b. Predictors: (Constant), Q2, Q13

c. Predictors: (Constant), Q2, Q13, Q9

d. Dependent Variable: Q6

Complied by the author

From the 16th table it follows that the involvement of variables in the calculation was carried out in 4 steps, that is, the variables: if a person has much desire to play after opening loot boxes with a customization effect, what is person's opinion on loot boxes that have customization items in free-to-play games and if Pay-to-play games bring much satisfaction when they have loot boxes with customization for the person. For each step, multiple regression coefficients, a measure of certainty, a biased measure of certainty, and standard error are output.

Table 17. Coefficients of H2

Model		Coefficients ^a						Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF	
		B	Std. Error	Beta					
1	(Constant)	1,559	,297		5,247	,000			
	Q2	,582	,076	,668	7,665	,000	1,000	1,000	
2	(Constant)	1,394	,289		4,828	,000			
	Q2	,432	,089	,496	4,866	,000	,663	1,509	
	Q13	,234	,081	,295	2,894	,005	,663	1,509	
3	(Constant)	,947	,337		2,813	,006			
	Q2	,261	,112	,300	2,329	,023	,390	2,561	
	Q13	,220	,078	,278	2,800	,007	,659	1,517	
	Q9	,283	,119	,282	2,380	,020	,461	2,170	

a. Dependent Variable: Q6

Complied by the author

The data on 17th table demonstrate that Statistics VIF are all under 10, so the multicollinearity is not observed and variables are acceptable as well as regression model.

Beta - regression coefficients, standardized to the corresponding range, indicate the importance of the explanatory variables involved in the regression equation.

The regression equation for predicting the Q2 is as follows:

$H2 = 0.261 * Q2 + 0,220 * Q13 + 0.283*Q9 + 0.947$. So, for a person that doubts about having much desire to play after opening loot boxes with a customization effect (3), Pay-to-play games rather bring much satisfaction when they have loot boxes with customization (4) and has strongly positive opinion on loot boxes that have customization items in free-to-play games (5) the outcome is rather positive opinion considering about loot boxes with customization affect. So, the hypothesis 2 is proven. Loot boxes with customization have a considerable impact on customer satisfaction.

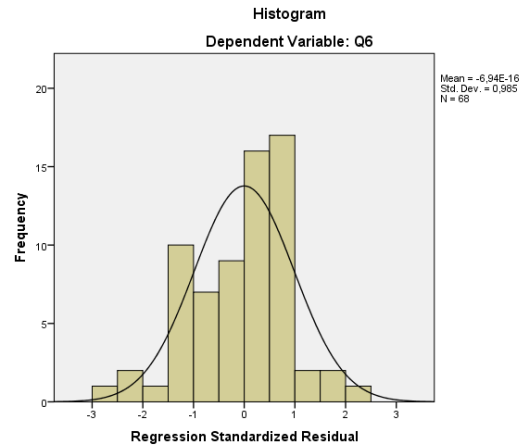


Figure 6. Regression analysis H2 – Histogram
 Compiled by the author

Figure 6 demonstrates the descriptive data for hypothesis 2.

Table 18. Model Summary for H3.

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,649 ^a	,421	,413	1,00761

a. Predictors: (Constant), Q12

b. Dependent Variable: Q5

Compiled by the author

From the 16th table it follows that the involvement of variables in the calculation was carried out in 1 step, that is, the variables loyalty due to loot boxes with items giving advances and will a gamer play in more games by one developer if their pay-to-play games have loot boxes that give an advantage. The variable Q10 was excluded.

From table 19th the research demonstrates that $H3 = 0,624 * Q12 + 0,885$. So, for the person that will a gamer play in more games by one developer if their pay-to-play games have loot boxes that give an advantage the answer is $H3 = 0,624 * 3.14 + 0,885 = 2.84$

Table 19. Coefficient of H3

Model		Unstandardized Coefficients		Coefficients ^a		Sig.	Collinearity Statistics	
		B	Std. Error	Standardized Coefficients Beta	t		Tolerance	VIF
1	(Constant)	,865	,220		3,932	,000		
	Q12	,624	,085	,649	7,334	,000	1,000	1,000

a. Dependent Variable: Q5

Complied by the author

For the summary for the H3 it is proven. Loot boxes with advantage items has a considerable impact on customer loyalty

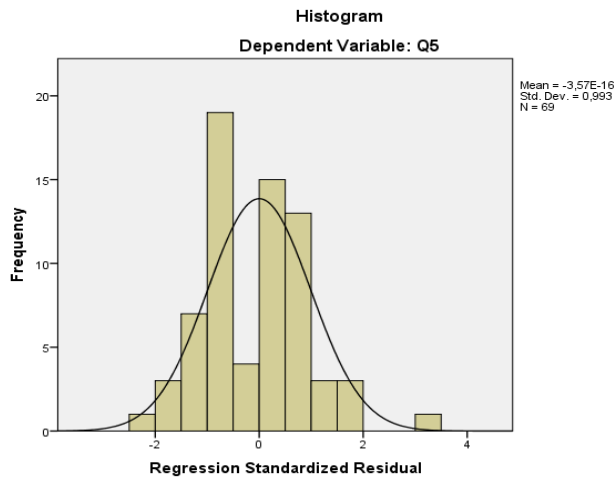


Figure 7. Regression analysis H3 – Histogram

Complied by the author

H4 has been proven as well. Table 20 and 21 prove this fact. In addition, more data can be seen in Appendix 2 regarding p-values. Loot boxes with advantage items has a considerable impact on customer satisfaction. This can be proven through this.

Table 20. Model Summary for H4

Model Summary^c				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,712 ^a	,507	,501	1,03674
2	,733 ^b	,538	,525	1,01153

a. Predictors: (Constant), Q3

b. Predictors: (Constant), Q3, Q11

c. Dependent Variable: Q7

Complied by the author

From the 16th table it follows that the involvement of variables in the calculation was carried out in 1 step, that is, the variables: if a player wants to play more in a game when there are loot boxes with items that give an advantage, if loot boxes with customizing effect may satisfy you in a subscription model game.

Table 21. Coefficients for H4

Coefficients^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,946	,244		3,880	,000		
	Q3	,738	,086	,712	8,611	,000	1,000	1,000
2	(Constant)	,499	,316		1,582	,118		
	Q3	,638	,096	,616	6,663	,000	,763	1,310
	Q11	,221	,103	,199	2,152	,035	,763	1,310

a. Dependent Variable: Q7

Complied by the author

From table 19th the research demonstrates that $H4 = 0,638 * Q3 + 0,221 * Q11 + 0,946$. So, if a person enjoys opening loot boxes in a game that give advantages to a player, rather wants to play more in a game when there are loot boxes with items that give an advantage, in the end the person's satisfaction would be significantly affected by the loot boxes that give the advantage.

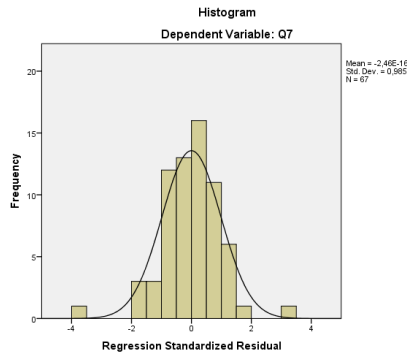


Figure 8. Regression analysis H4 – Histogram
 Compiled by the author

Table 22. Coefficients of H5

		Coefficients ^a					Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	2,131	,364		5,852	,000		
	Q15	,530	,096	,540	5,520	,000	1,000	1,000

a. Dependent Variable: Q14

Compiled by the author

On table 22, the research shows that the regression equation looks like this: $H5 = 0,530 * Q15 + 2.131$. So for example, if a person answers on the question “Would you keep playing a game with loot boxes that satisfies you” is strongly (4-5) the outcome is 4.78.

Table 23. ANOVA for H5

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33,817	1	33,817	30,469	,000 ^b
	Residual	82,131	74	1,110		
	Total	115,947	75			

a. Dependent Variable: Q14

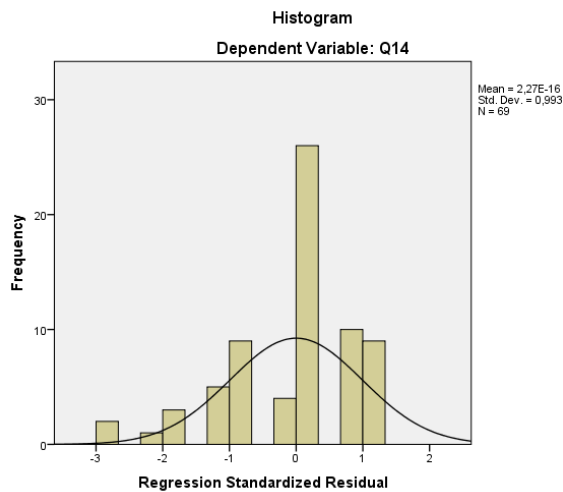
b. Predictors: (Constant), Q15

Compiled by the author

Table 15th demonstrates in this example, the measure of uncertainty is: $33,817/115,947=0.3$

As well as other hypotheses H5 is proven. Satisfaction has an impact on loyalty in games.

Figure 9. Regression analysis H5 – Histogram



Complied by the author

To conclude, regression analysis the research will demonstrate the summary of proven and not proven hypothesis.

Table 24. The outcome of regression analysis considering hypothesis

Hypothesis	Questions	State
H1	4, 8	Proven
H2	6, 2, 9, 13	Proven
H3	5, 10, 12	Proven
H4	7, 3, 11	Proven
H5	14, 15	Proven

Complied by the author

Due to these results, there is a conflict of opinions of literature analysis and the results themselves. Most researchers stated that the loot boxes are the way to monetize the gaming products and most of people state that there are consequences of loosing satisfaction and in the end loyalty because of these reasons.

As the results show that 5 of the hypotheses have been proven. The authors from the literature analysis were stating the fact that loot boxes. From the answers of the gamer participants using the regression and correlation analysis one can say that there is obvious connection of the loot boxes on the satisfaction and loyalty. It has been also predicted that there is strong and obvious connection between satisfaction affecting loyalty in online game sphere.

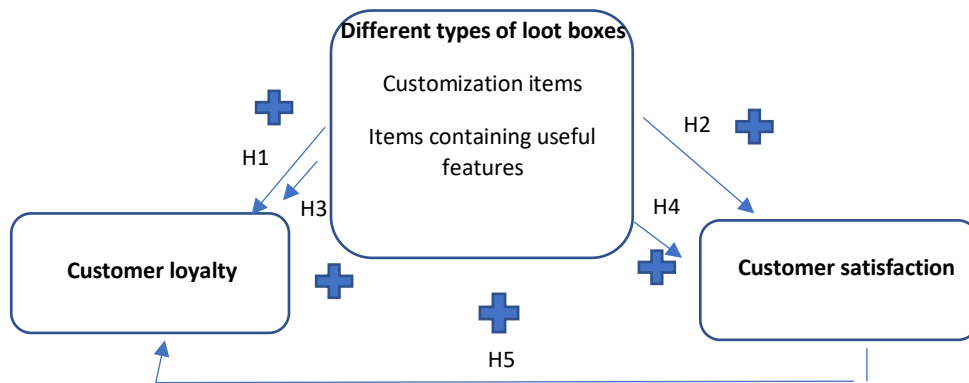


Figure 10. The outcomes of the research
Compiled by the author

Discussion

The aim of this degree project is to examine the impact of loot boxes on buyer satisfaction and loyalty in online video games. These objectives will be used to achieve the main aim.

- To investigate how different types of loot boxes influence customers satisfaction and loyalty.
- To investigate how loot boxes affect loyalty and satisfaction in online games considering different business models.

- To investigate how satisfaction affects loyalty in video games.

For this research, such hypotheses were used to prove the problems.

- H1 – Loot boxes with customization have a considerable impact on loyalty.
- H2 – Loot boxes with customization have a considerable impact on satisfaction.
- H3 – Loot boxes with advantage items have a considerable impact on customer loyalty.
- H4 – Loot boxes with advantage items have a considerable impact on customer satisfaction.
- H5 - Satisfaction has an impact on loyalty in games.

Correlations demonstrate the results where all variables are connected inside each ones' hypotheses.

Summarizing all outcomes all hypotheses have been proven in this research that states the fact that loot boxes have an impact on customer satisfaction and customer loyalty.

The results of this degree have different results to ones from the previous researchers. All the researchers were stating the problem that loot boxes will definitely have significant on customer satisfaction and loyalty but in a negative way. Stating the fact that loot boxes are made only for

commercial aims. They also state that people are more likely to leave the game as soon as loot boxes appear.

The results of this degree show the opposite. It can be connected with the fact that previous researchers did not define the different types of loot boxes in different types of game that can have an impact on customer satisfaction and loyalty.

The research provides new insight into the relationship between loot boxes, customer satisfaction and customer loyalty. Though, the outcomes of the relationship between loot boxes that give an advantage had to negatively affect both customer satisfaction and customer loyalty in the end, if the previous researches' results are taken. It can be also explained because people expect to see the precise type of loot boxes in those different types of online games.

The limitations of the research are obvious. The lack of budget is the main problem of studies of this type. The surveys are advised to be taken in person, accounting to the previous researches' results, but due to the COVID-19, it is impossible to perform. Although the online survey is considered as best for such type of target audience, there were not that many participants.

Also, it is beyond the scope of the research the real outcome of loot boxes on the financial success of any games. Even if the reviews are negative, but the game continues getting income, and it can even increase with each added loot box, there is no sense to study the impact of loot boxes on satisfaction and loyalty. Because even if customers are not loyal or satisfied, the games could still get income. Unfortunately, these data are not available in the network.

The proposal is to make this study as precise as possible, one of the most important ideas is to test the results including geographical data.

CONCLUSIONS AND PROPOSALS

The importance and relevance of this topic may be useful to the companies providing online video games to look at their performance regarding loot boxes within satisfaction and loyalty. Even if it does not influence their revenues. Companies are balancing between considerable customer satisfaction and a wish to launch as many loot boxes as they can. It will definitely impact customers' attitudes toward the product or the brand itself.

The degree uses the online survey method for data collecting. The sampling method is Non-Probability Sampling Method - Convenience sampling. Of all the participants, 91,4% are the target audience.

The online survey was sent to all the people who are into games and was posted on gaming sites, YouTube channels dedicated to games, and posted on Twitch streams.

The author uses correlation and regression analysis. Correlation used in the empirical part demonstrates that variables have a connection, but which is not significantly high. In the end, Regression analysis has proven four hypotheses out of five. For a final conclusion, the statements are right:

- Loot boxes with customization have a considerable impact on loyalty.
- Loot boxes with customization have a considerable impact on satisfaction.
- Loot boxes with advantage items have a considerable impact on customer loyalty.
- Loot boxes with advantage items have a considerable impact on customer satisfaction.

Although, the last hypothesis stating that satisfaction has an impact on loyalty in games has been proven as well.

As it was stated that the aim is to examine customers' opinions on the loot boxes. Opposite from Balakrishnan (2018), Hong (2019), and Li et al (2019) who were stating that loot boxes will drive to the bad outcome for both sides: customers and companies. Though, even if the game has only bad or neutral reviews, it does not mean that the game will not be remade and fix all the problems.

The main problem of this research is the lack of budgeting. It is not enough to run such a study without funding. Moreover, this study uses online surveys, and to advertise such type of survey is possible on the sites for the target audience, such as gaming sites, famous YouTube Channels.

Also, the author may propose to do this study more specifically and to do the research based on geographical factors. Previous researchers also have not included it, but the outcome of this study with geographical factors is hard to even predict.

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GROBIŲ DĖŽUČIŲ POVEIKIS KLIENTŲ PASITENKINIMUI IR LOJALUMUI INTERNETINIUISE VAIZDO ŽAIDIMUOSE

Oleksandr Kurchenko

Magistro baigiamasis darbas

Pasaulinis verslas ir ekonomika

Ekonomikos ir verslo administravimo fakultetas, Vilniaus universitetas

Vadovė docentė Aurelija Ulbinaitė

SANTRAUKA

70 puslapiai, 24 lentelių, 27 skaičiai, 39 nuorodos.

Pagrindinis šio magistro baigiamojo darbo tikslas yra nustatyti, ar skirtingų tipų plėšikavimo dėžės turi įtakos klientų pasitenkinimui ir lojalumui. Be to, pasitenkinimo ryšys su lojalumu interneto vaizdo žaidimų srityje.

Meistras susideda iš trijų pagrindinių dalių: literatūros analizės, tyrimo ir jo rezultatų, išvados ir rekomendacijų.

Kalbant apie literatūros analizę, autorius nustatė ankstesnių tyrimų trūkumus ir sukūrė konkrečias hipotezes, kad būtų galima tiksliau prognozuoti rezultatus. Šis dalykas yra naujas mokytis ir stebėti, todėl nėra daug literatūros analizuoti.

Atlikti tyrimai atskleidė įvairių tipų plėšikauti dėžės ir tipų žaidimų poveikį klientų lojalumui ir pasitenkinimui. Be to, tyrimas ištyrė pasitenkinimo poveikį lojalumui interneto vaizdo žaidimų srityje. Rezultatai buvo atskleisti naudojant internetinį apklausos duomenų rinkimą, SPSS regresiją ir koreliacinę analizę.

Išvadose ir rekomendacijose apibendrinami atliktų tyrimų rezultatai. Rezultatai buvo lyginami su literatūros analize, siekiant įrodyti, kad loot dėžės gali turėti teigiamų atsiliepimų iš tikslinės auditorijos. Tai gali būti naudinga įmonėms, kurios gamina internetinius vaizdo žaidimus, kuriuose yra plėšikauti dėžės.

IMPACT OF LOOT BOXES ON CUSTOMER SATISFACTION AND LOYALTY IN ONLINE VIDEO GAMES

Oleksandr Kurchenko

Master Thesis

Global Business and Economics

Economics and business administration faculty, Vilnius university

Supervisor assoc. prof. Aurelija Ulbinaitė

SUMMARY

70 pages, 24 tables, 27 figures, 39 references.

The main purpose of this master thesis is to determine whether different types of loot boxes affect customer satisfaction and loyalty. In addition, the connection of satisfaction to loyalty in the online videogames sphere.

The master consists of three main parts: the analysis of literature, the research and its results, a conclusion, and recommendations.

Regarding literature analysis, the author has found flaws in the previous research and designed specific hypotheses to be more accurate in a way of predicting the outcome. This subject is new to study and observe, hence there is not much literature to analyze.

The performed research has revealed the impact of different types of loot boxes and types of games on customer loyalty and satisfaction. Moreover, the research has studied the impact of satisfaction on loyalty in the online videogames sphere. The results have been revealed with online survey data collection, SPSS regression, and correlation analysis.

The conclusions and recommendations summarise the results of the performed research. The results have been compared to the literature analysis in a fact to demonstrate that loot boxes may have positive feedback from the target audience. It may be useful for companies who produce online videogames containing loot boxes.

ANNEXES

Annex 1. Survey of the research

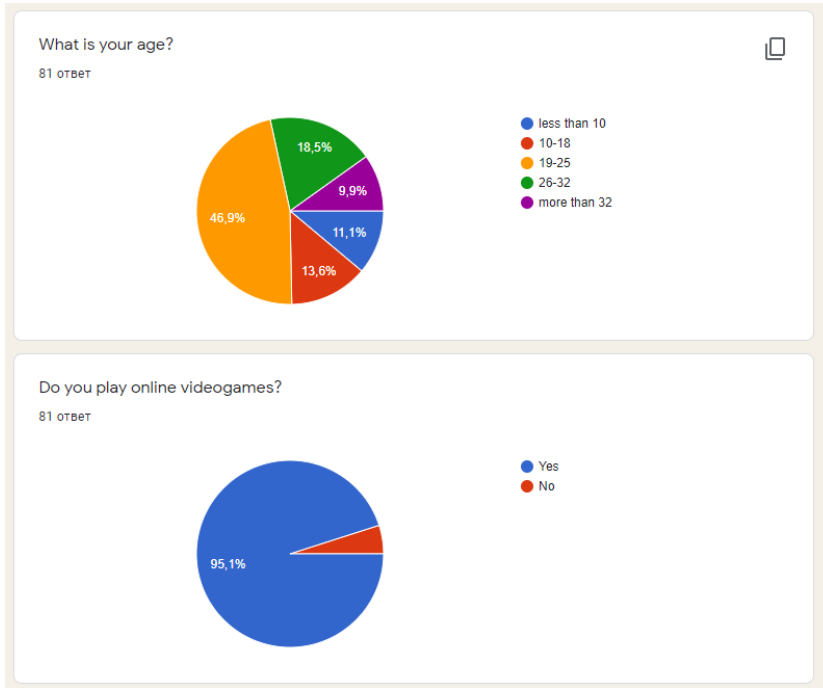


Figure 11. Survey 1
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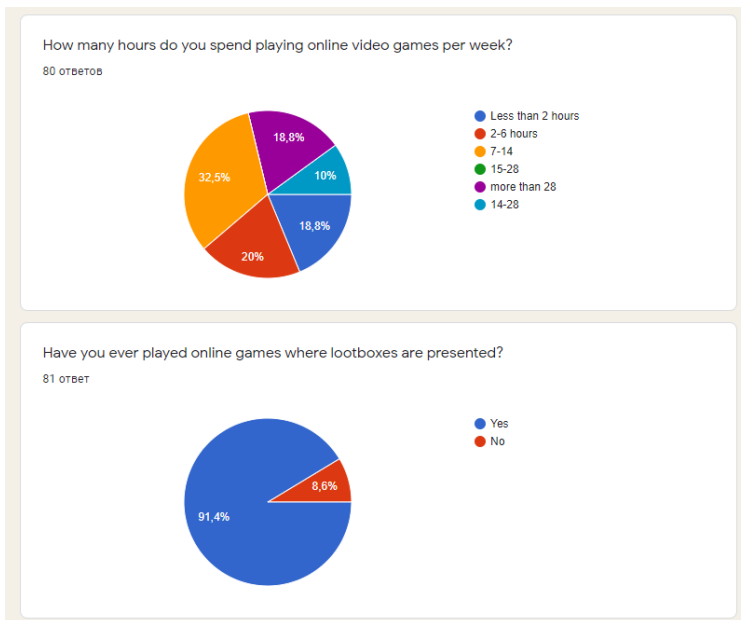


Figure 12. Survey 2

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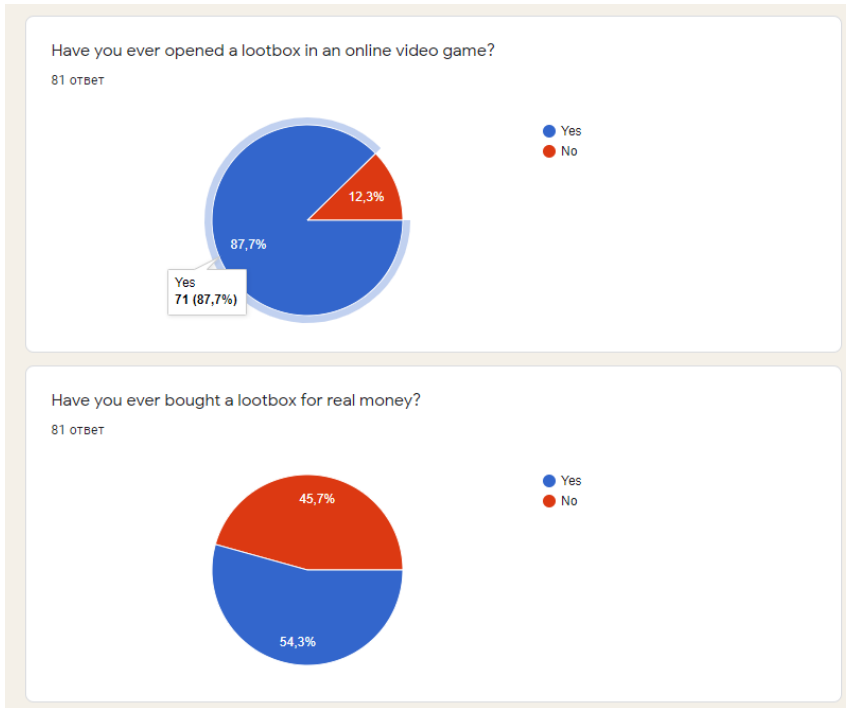


Figure 13. Survey 3

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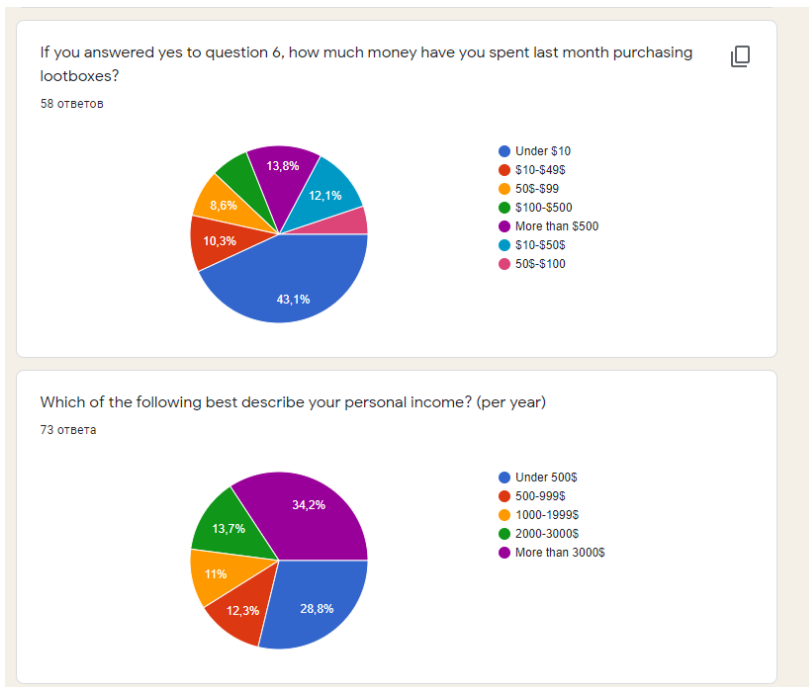


Figure 14. Survey 4

Complied by Author

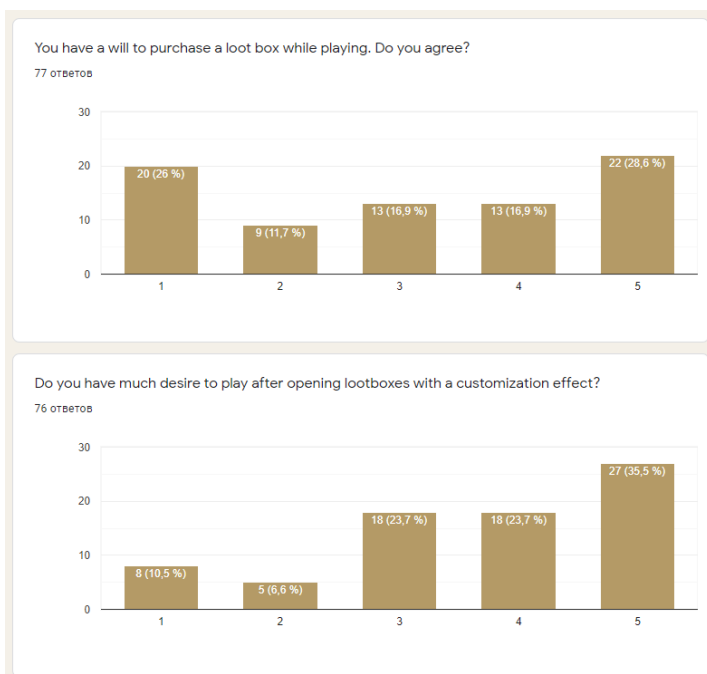


Figure 15. Survey 5

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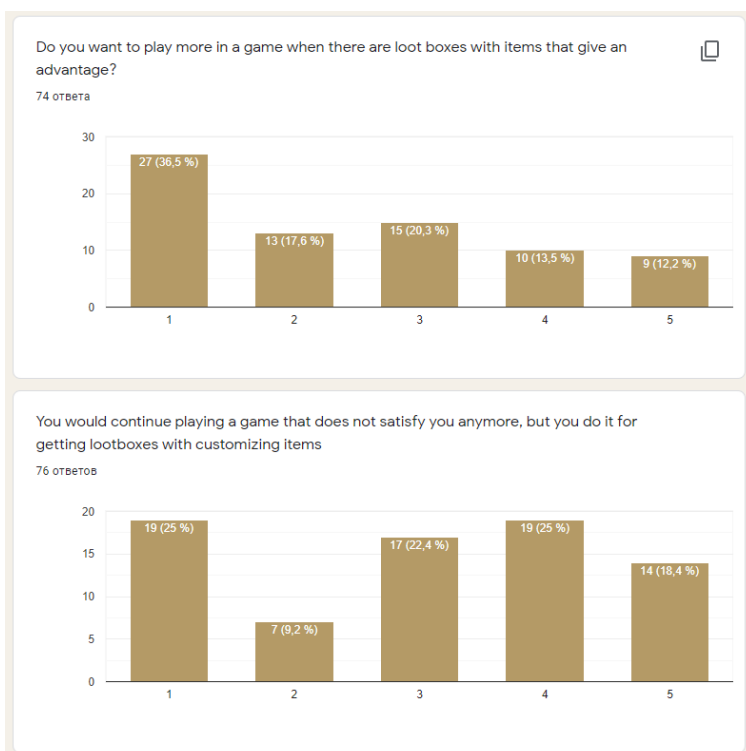


Figure 16. Survey 6

Complied by Author

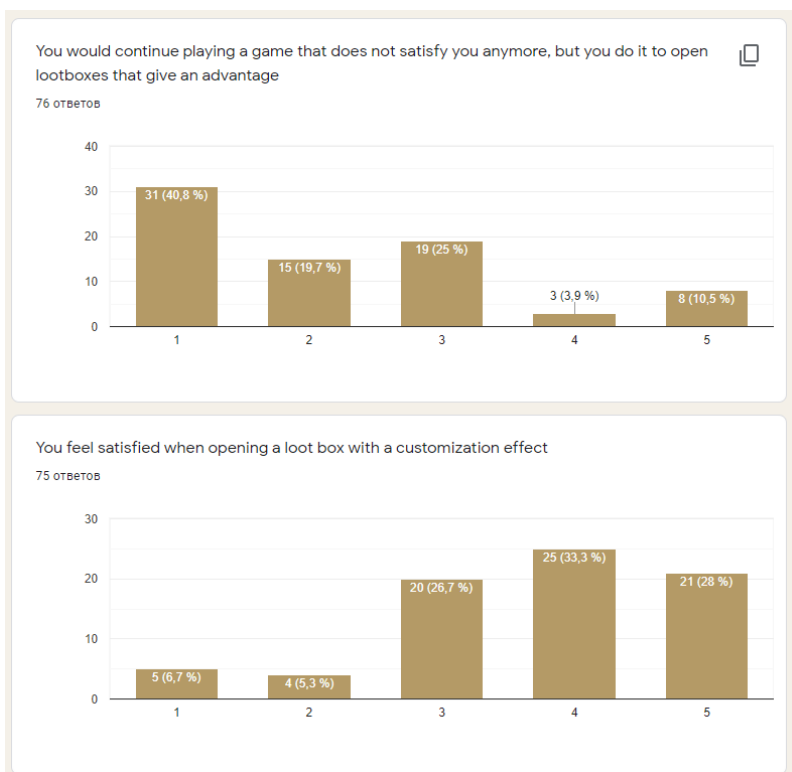


Figure 17. Survey 7

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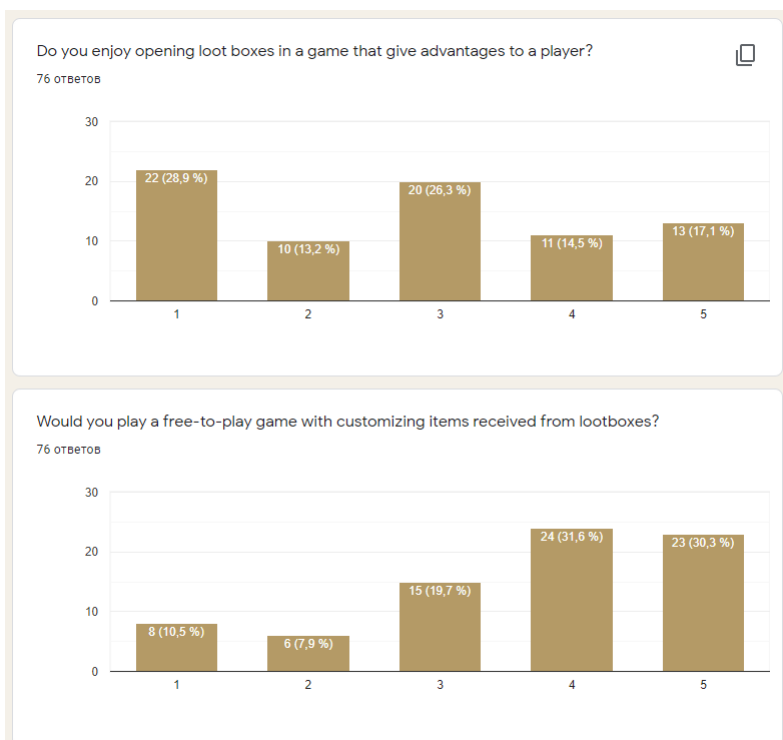


Figure 18. Survey 8

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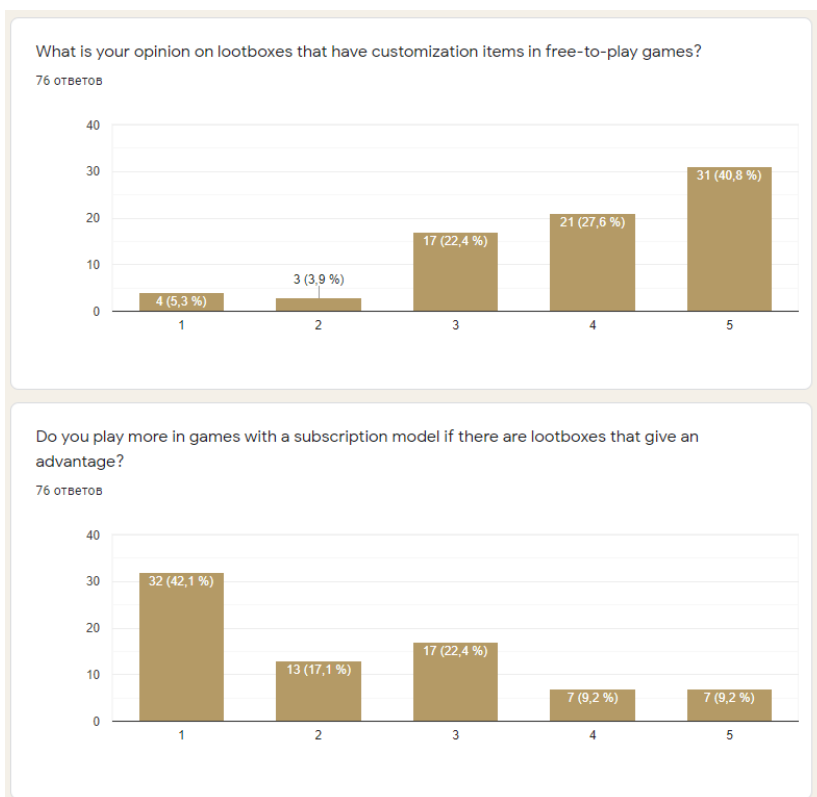


Figure 19. Survey 9

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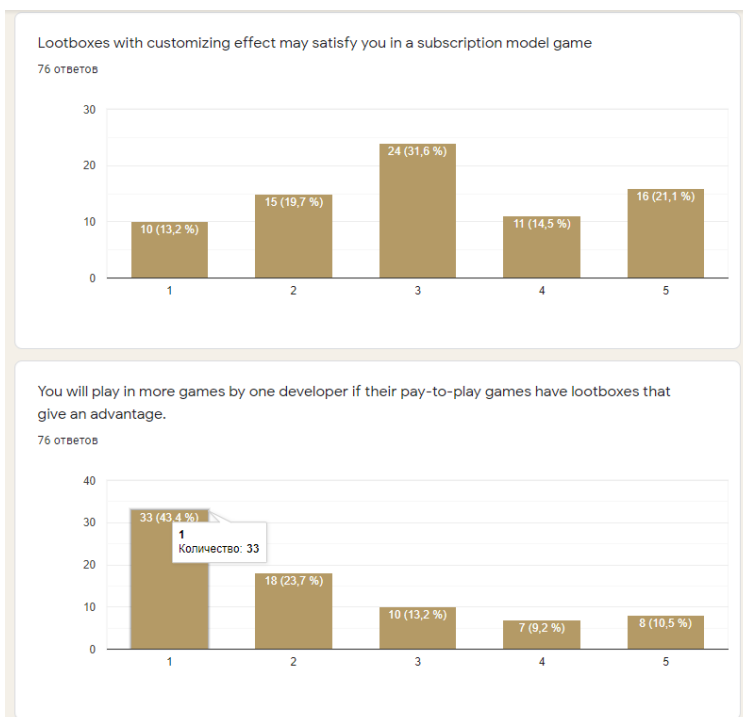


Figure 20. Survey 10

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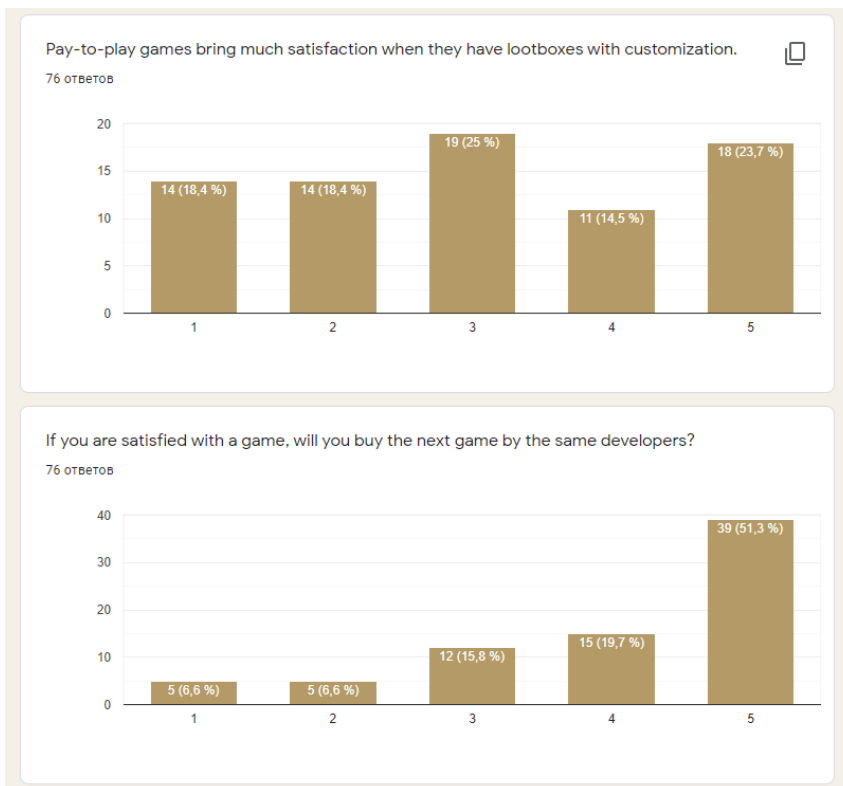


Figure 21. Survey 11

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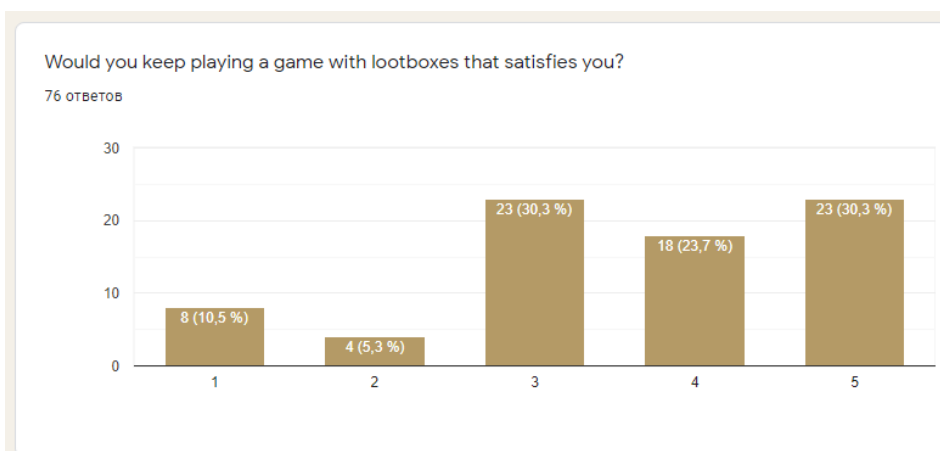


Figure 22. Survey 12

Complied by Author

Annex 1. P-P Plot of Regression

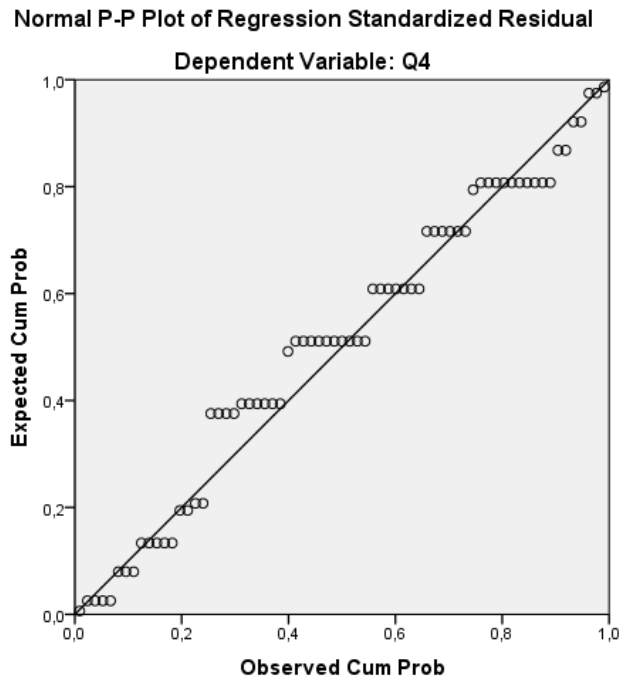


Figure 23. H1 P-P plot
Complied by the author

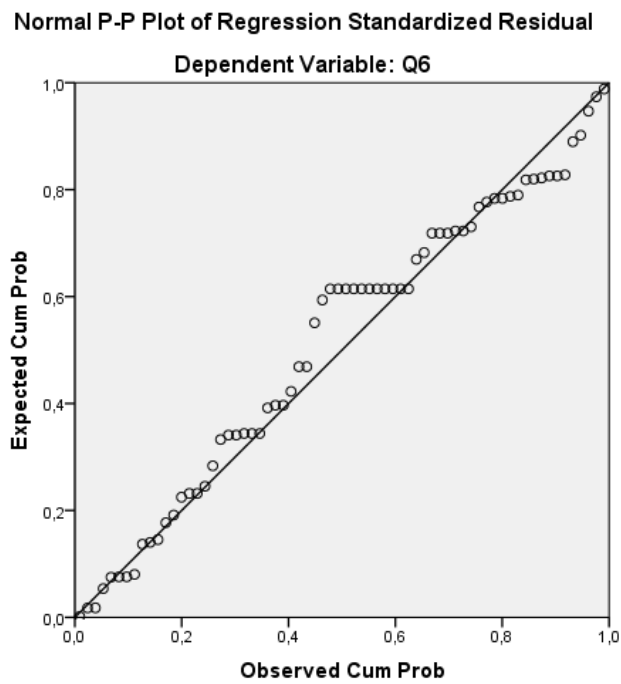


Figure 24. H2 P-P plot
Complied by the author

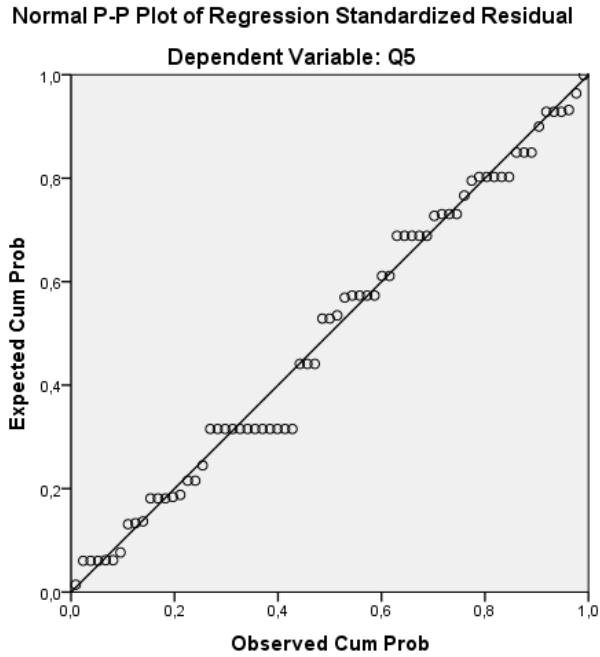


Figure 25. H3 P-Plot
Complied by the author

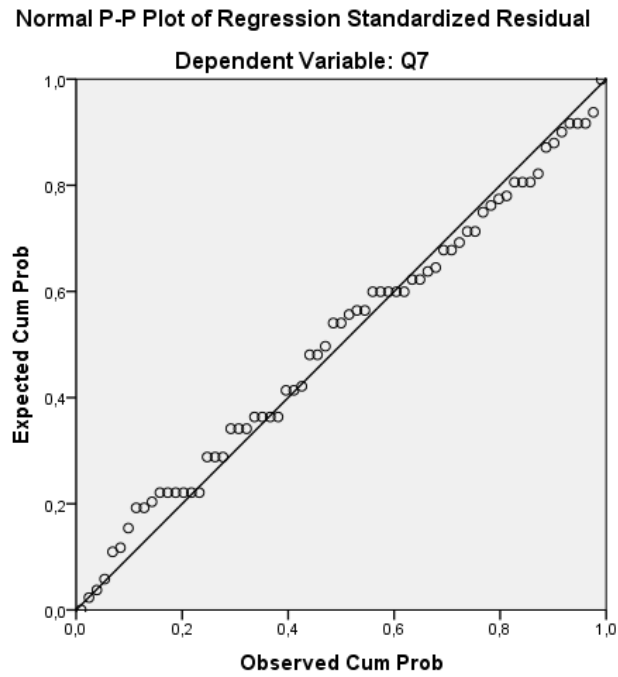


Figure 26. H4 P-P plot
Complied by the author

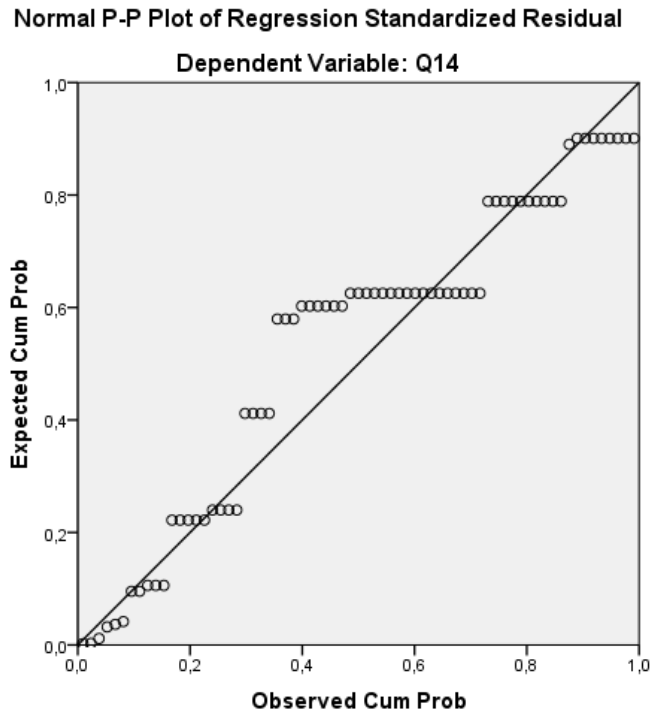


Figure 27. H5 P-Plot
Complied by the author