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To Mod or Not to Mod—An Empirical Study on Game Modding as Customer Value Co-Creation

Katarzyna Bilińska-Reformat ^{1,*}, Anna Dewalska-Opitek ²  and Magdalena Hofman-Kohlmeyer ² 

¹ Department of Marketing Management and Tourism, University of Economics in Katowice, 1 Maja 50, 40-287 Katowice, Poland

² Department of Organisational Relationship Management, University of Economics in Katowice, 1 Maja 50, 40-287 Katowice, Poland; a.dewalska-opitek@ue.katowice.pl (A.D.-O.); magdalena.hofman-kohlmeyer@edu.uekat.pl (M.H.-K.)

* Correspondence: katarzyna.bilinska-reformat@ue.katowice.pl; Tel.: +48-502-229-123

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Abstract: A spiking interest in customer's value co-creation may be observed lately, especially in the gaming industry. The general purpose of this study is to identify the customers' inclination to perform game modding as a manner of value co-creation which benefits both companies and other game users. The current knowledge regarding the factors determining this behaviour is, relatively speaking, weak. The authors conducted qualitative research in the forms of in-depth interviews and focus groups with Polish game players (including mod users and mod creators). This study provides evidence for the peculiar motives of the customers performing different levels of engagement: mod users are driven by game enjoyment, focusing on the motives and social affiliation of multiplayer groups, while mod creators are mainly motivated by the enjoyment of creation, pride, creativity, and epistemic curiosity; engagement and social affiliation are received by mod creators with unique talents. The paper provides tentative evidence for specific customers' motivations to co-create, which benefits both companies (game developers) and other game users. The players are perceived as an inseparable part of the gaming industry, who deliver extra value to the market through game modding activities. The paper provides useful, executable guidance on how to encourage and support players to engage in value co-creation in virtual worlds. The study may enrich our understanding of customers' inclinations on both theoretical and empirical levels, showing some of the motivations both to use and create mods. In comparison to previous research, mod creators and mod users were researched separately in this study, and thus a distinction of their different sets of motives was enabled. Both practitioners and researchers may find what is uncovered in the paper engrossing.

Keywords: value co-creation; game modding; customer engagement

1. Introduction

The environment of modern markets is increasingly complex and dynamic, and the traditional roles of customers and producers are partly reversed and complemented. There is no more 'passive audience'; consumers have become 'active co-creators' [1]. With each product or company, customers engage in a number of behaviours that strengthen their relationship, as well as with other customers, leaving behind typical customer devotions. [2].

Game modding is a peculiar form of customer value co-creation. In the modern computer gaming industry, players' co-creation performs a pivotal role. Customers engage in game modding, but the level of engagement differs, from mod users to mod creators. The majority of research has focused on the nature of the value co-creation that can be shown in a review of the emerging literature. A distinction

of customers' scope of engagement is missing in the discussion. Our study tries to address the gap in our information of customers' inclinations to engage in value co-creation in the form of game modding. Customers' engagement and game modding are usually characterised separately. The conditions of growing competition and the global pandemic prove the importance of the undertaken issues, and gaming providers are looking for new strategies of functioning in the market. Such a possibility is visible in the sphere of customers' needs and wants. Contemporary customers play an active role as the co-creators of games by modding them. Taking the setting of their favourite game and customizing it for entertainment purposes or to convey information, any user can participate in the creative process by game modding. The study attempts to address the gap in our knowledge of customers' inclination to engage in value co-creation in the form of game modding. This is also the novelty of our study. First, the study explains the extent to which game players are willing to engage in the co-creation behaviour. Second, the study identifies the motives of game players performing different scopes of engagement on the basis of theories of motivation. Third, we synthesize who can benefit from game modding and how managers can create an experience which motivates participants to engage in co-creation in virtual communities. The gap associated with the lack of generalized explanations related to customer's engagement and co-creation in the gaming sector will be concerned with the importance of the topic.

Platforms with innovative gaming models, i.e., a global digital marketplace offering games by the use of redemption keys, may be noticed as another interesting trend. Platforms like G2A.com do not sell or purchase any digital products themselves; by connecting the buyer to the seller they act as intermediaries. The supporting of knowledge sharing among gamers and game producers is an example of such a business model.

Responding to the research questions, qualitative research was conducted in the forms of individual deepened interviews and focus groups with online game players. As well as the research results, the paper also presents some limitations, indicates the possible future research areas, and concludes.

2. Value Co-Creation as Customers' Voluntary Participation in Collaborative Innovation

Recently, there has been a focus on customer behaviour in management and marketing literature [3–6]. Prior studies have recognized the role of customers who engage in a variety of positive, discretionary behaviours directed towards companies, and other customers [7]. Various terms have been used to describe this behaviour, including customer voluntary behaviour [4,8,9], customer citizenship behaviour [5,10], or a subject matter of general interest presented in this paper, which is customer value co-creation.

The term 'customer value co-creation' was first used by Kambil, Ginsberg and Bloch [11] to underline, in business strategy, the role of customers. It was then popularised and disseminated by Prahalad and Ramaswamy [1], who conceptualised value co-creation as the "co-creation of personalised experiences with the customers". Organisations should place emphasis on experiences at the multiple points of exchange as the basis of value co-creation, instead of focusing only on what they can offer [12].

Today, various perspectives have been considered by authors who study value co-creation, i.e., the marketing perspective, the management perspective, service dominant logic and service logic, design logic, and the new product development perspective and innovation [12]. Different perspectives are represented by numerous definitions of value co-creation. The chosen definitions synthesised from various authors are presented in Table 1.

Table 1. Various definitions of value co-creation.

Authors	Value Co-creation Definition
1	2
[13]	“(. . .) is considered as an important manifestation of customer engagement behaviour toward a brand or a firm, resulting from motivational drivers.”
[14]	“(. . .) an interactive, creative and social process between stakeholders that is initiated by the firm at different stages of the value creation process.”
[15]	“(. . .) as a process that provides an opportunity for on-going interaction, where the organization is willing to share its world with external stakeholders and can generate in return the insight that can be derived from their engagement.”
[16]	“(. . .) is a joint collaborative activity by parties involved in direct interactions, aiming to contribute to the value that emerges for one or both parties.”
[17]	“(. . .) is an activity undertaken by the consumer that result in the production of products they eventually consume and that become their consumption experiences.”
[18]	“(. . .) as a set of organizational strategies and discursive procedures aimed at reconfiguring social relations of production, works through the freedom of the consumer subject with the objective of encouraging and capturing the know-how of this creative common.”
[19]	“(. . .) is company-consumer interaction (social exchange) and adaptation, for the purpose of attaining added value.”

Data source: [12,13].

Consumer value co-creation may therefore be concluded to be collaborative work between a consumer and a firm in an innovation process, whereby the consumer and supplier engage (to different degrees) in co-design, in the activity of co-ideation, the co-creation of new products or services, and co-development [1,20].

According to Roser et al. [21], value co-creation is a specific form of user contribution whereby ‘active’ (as opposed to ‘passive’) voluntarily input is contributed, and consumers participate with the firm (be that in the form of knowledge, informed opinions, experience or resources) in an innovation process, the outcome of which is greater and more market-focused innovation [22].

Value co-creation, however, should not be confused with value co-production. Lusch and Vargo [23], Etgar [24], Roser et al. [21] indicate the differences between co-production and co-creation, i.e., the co-creation of value takes place in the consumption stage (i.e., when the consumer is consuming using the product, following production and launch), and co-production takes place in the production process preceding the consumption stage (i.e., during the development of the initial product) [22–24].

This study focuses on customers’ co-creation, not co-production, which means that the customers interact with a product that has already been launched, and add value to it at the consumption stage for the benefit of other product users and its producers.

Jawecki and Fuller [25], followed by Roser et al. [21], identified three types of co-creation activities, i.e., direct collaboration with a firm, independent customer innovation, and joint innovation activities [22]. Viewing consumers as co-creators of value, the company utilises them as operant resources in the firm’s innovation process [17], making use of their creativity, skills, and knowledge. There are many parties which benefit from this activity:

- a The company, which is the most apparent beneficiary: due to co-creation, the service or the value of a product is improved much earlier than it would have been had the creation of value been left solely to the firm, thereby enhancing the product’s longevity and marketplace acceptance [22],
- b Other customers, who take advantage of the product or service improvements, the higher quality level, and the better usability, etc. [26],
- c The co-creating customers, who are willing to provide extra behaviour roles [10].

It should be noted that value co-creation requires consumers to invest their resources or a sacrifice on the customers’ part (such as effort and time), which is sometimes described as supportive behaviour, or as commitment [27]. It should be driven by specific motives, since the behaviour is voluntary. A question may therefore arise: what might be the predecessors of customer value co-creation? Addressing this question requires the consideration of related concepts and theories that are relevant to the subject matter.

Fowler’s theory of motivation [28] may solve the question, with special regard to intrinsic and extrinsic motivations. The intrinsic motivation refers to doing something because it is inherently interesting, in accordance with customer’s attitudes or values, or enjoyable [28]. Elster [29] pointed towards altruism motivation. Studies on human altruistic behaviours have shown that extra behaviour roles can make the value co-creator feel satisfied and happy. Once people do a good thing, they will do more to obtain inner happiness [29]. The extrinsic motivation, however, refers to doing something because it leads to a separable outcome; for instance, it may be rewarded and appreciated by a reference company or group [30,31].

Fernandes and Remelhe [13] proposed a model in which they point at four specific motives as drivers for customer involvement in the co-creation process, i.e., intrinsic motives (such new experiences, joy, and curiosity), financial motives (such as expected rewards or monetary compensation e.g., special offers, prices), knowledge motives (the improvement of self-development, skills) and social motives (community, the sense of belonging, the sense of communication) [32], which may be referred to as an orientation towards Maslow’s social and self-esteem needs [13].

Value co-creation, as a voluntary activity, may also be explained by the social exchange theory in general, and the principle of reciprocity in particular. The core tenants of this framework are voluntary actions of an unspecified nature that extend beyond basic role obligations and suggest a personal commitment to others [33,34]. Through value co-creation, customers expect to be helped and appreciated in the future—not necessarily by the same beneficiaries, but they will become the recipients of support when needed [35].

A complex model of co-creation motivation was proposed by Holbrook [26] and followed by Roser et al. [21]. It combines the above-mentioned motivation theories (see Figure 1).

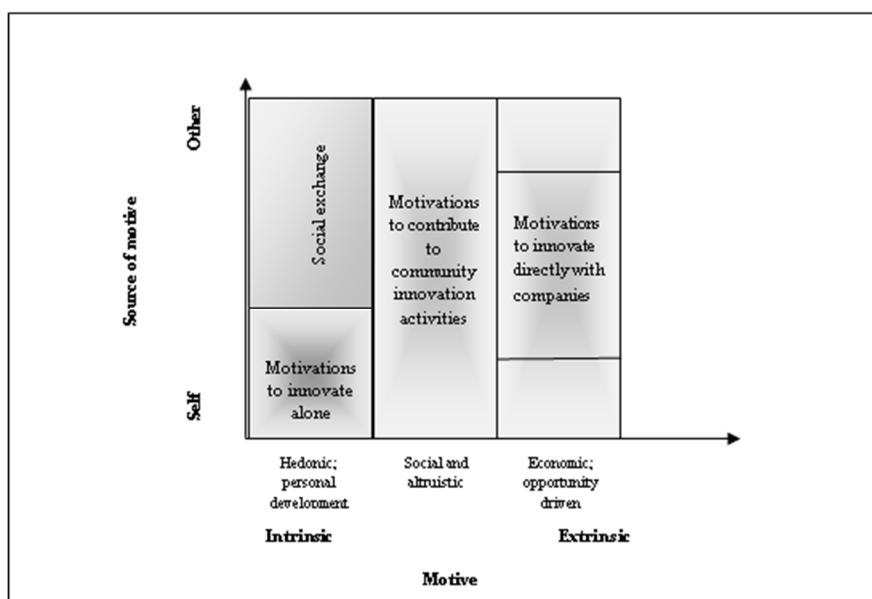


Figure 1. Consumer value co-creation based on motivation theory. Data source: [22,26].

Among the intrinsic (self-oriented) drivers to innovate, we may point towards the desire for a better product, escapism, passion, or fun, as well as personal skills development and development capability.

The social motivations to co-create are helping others, building ties to the community, and reciprocity. Among the altruistic motives, the following may be mentioned: belongingness, feedback, recognition, and making friends. The economic and opportunity motives to collaborate directly with companies may come in terms of in-game rewards, the desire for better product, recognition, or career opportunities [22].

3. Game Modding as a Form of Customers' Value Co-creation

An interesting form of customers' value co-creation that is presented in this paper is game modding. Players' co-creation has performed an important role in computer gaming for decades. Game modification (or game modding) is the process of changing a computer game by introducing new artefacts into the game environment, provided by a member of a general public. These modifications, also known as 'mods', represent various game elements, such as new buildings, weapons, characters (e.g., enemies), models, textures, colours, gaming areas (e.g., levels, maps), rule sets, and story lines [36,37]. In extreme cases, the modder removes almost the entire original content of the game and creates a completely new one. This action is known as 'total conversion modding' [38,39].

Game modding requires advanced skills, such as programming, video making, sound recording and graphic editing. The vast majority of creators collaborate in teams, gain important skills, help one another, and constitute some kind of community [40]. A standard large modification for a top action-adventure game was estimated to take over 1000 h of work per one creator, and approximately 39,000 hours working collectively for a team. A group of game content producers is named a 'user/developer community' or a 'modding community'. Modding communities are also helpful to independent creators for the distribution of their work amongst community members, and for gaining feedback and advice [41].

Historically, modding comes from hacking, when computer hobbyists modified game codes without the company's consent [42]. According to the literature, the first episode of game modification was 'Adventure', a game produced in 1976 by Don Woods, a variation of 'Colossal Cave', developed by Will Crowther [43]. After the first mod had been performed, a trend of changing the game content amongst players gained popularity, and the process of creating games changed [42]. In the late 1990's, when game developers realized that game modifications extended the lifespan of a game at little cost, they began to separate gaming experiences (e.g., behaviours, characters) from the underlying engines that power them. In this way, game developers allowed the players to create new game elements and feature them inside the game. Frequently, game producers provided tools to help designers to modify the game [44,45]. For example, the company G2A uses modding tools; these add-ons let players play and create scenarios and contexts (mods), and lets them share them with other users [46].

An example of a game that allows players to modify the content is Second Life. The users of Second Life are encouraged to use a dedicated scripting language and collaborate with one another. The game developers gave the players consent and rights to use their piece of work and earn money [47]. Many of the users established their own virtual businesses inside the virtual worlds. They bought and sold virtual items, or bought and provided virtual services. In 2006, 25% of Second Life users were sellers of their self-created virtual items [48,49].

Literature studies allow the identification of various types of game mods. According to Hackman and Björkqvist [50], game mods can be divided into characters, item availability, equipment, graphics, locations, placement, improving immersion, and custom help [50]. The detailed typology of game mods suggested by Hackman and Björkqvist is presented in Table 2.

Scacchi [51] describes the following groups of mods: user interface agents and customizations, machinima, game conversions, and the hacking of closed game systems [51].

Table 2. Types of game mods according to Hackman and Björkqvist.

Type of Game Mods	Characteristics of the Mod
characters	modifying in-game character or creating new one
item availability	changing the availability of items and equipment inside the game
equipment	creating or modifying player equipment such as clothes, accessories, or weapon
graphics	creating or 3D Models, textures, and meshes
locations	creating or modifying places and locations the player can visit inside the game
placement	moving or placing objects, added or pre-existing
improving immersion	adding or modifying character narrative, books, or quests
custom help	giving other players help or advice or creating elements for their modifications

Data source: [50].

User interface customizations and agents include mods which improve the game experience and are supported by the game developers. There are three types of interface customizations. The first, and most popular, is the player's ability to choose, accessorize or attire a player's in-game identity. The second, is the player's ability to customize the representational framing and colour borders of their game display within the human-computer interface, much like what can also be achieved with Web browsers and other end-user software applications. Third, are user interface add-on modules that modify the player's in-game information management dashboard, but do not modify the underlying game play functions or rules.

Game conversions are the most popular type of game modifications. Such conversions are partial, in that they modify or add in-game characters and non-player characters. Some more ambitious modders go as far as to accomplish total conversions, which create completely new games from existing ones, of a kind that is not easily determined from the original game.

Machinima can be seen as the product of modding efforts that intend to modify the visual replay of usage sessions in the game. Machinima employs computer games as their source of creative media, such that these new medias are mobilized for some other purpose (e.g., creating online cinema or interactive art exhibition). Machinima focuses attention on playing and replaying a game for the purpose of movie making, storytelling, or the retelling of high or daunting efficiency game usage/play experience.

Game conversions offer the chance to manipulate objects and create players' own constructions with friends, to modify the game, to create players' own servers with mods, and to configure it exactly to the player's liking. Such possibilities are given, for example, by the G2A company [46].

Hacking a closed game system is not focused on how to improve the game itself, but rather on understanding how the game works and how the game platform is designed. In this case, mod creators cannot have any support from the game developer, because game developers try to prevent modding activities [51].

4. Research Methods

The intention of this study was to identify the inclination of customers to perform game modding as a form of value co-creation which benefits companies and other game users. The conducted research enabled us to reveal answers for the following research questions:

1. To what extent are game players willing to engage in value co-creation behaviours by using or creating game modding?
2. What are the motives for game modding?
3. Who can benefit from game modding?

The nature of the research was exploratory, being conducted in order to determine the nature of the problem, and was not intended to provide conclusive evidence, but rather to obtain a deeper

understanding of the problem [52]. The data collection was accomplished through two methods of qualitative research, i.e., in-depth interviews and focus groups. They were a part of broader spectrum of gaming behaviour research conducted between December 2018 and December 2019 on Polish game users; nevertheless, the paper presents only a limited extent, i.e., research findings referring to customers' value co-creation in the form of game modding.

First, five individual deepened interviews amongst adult Polish players were carried out. For the research purposes, the 'Euro Track Simulator 2' computer game was chosen, due to the fact that its users have the opportunity to impersonate truck drivers and deliver important cargo across impressive distances. The game environment reflects the real world in such a way that the players gain the impression that they really move trucks along the roads in countries such as UK, Belgium, Germany, Italy, the Netherlands, and Poland. The game also allows the players to create and expand their own transportation companies.

The respondents were invited to participate in the individual deepened interviews systematically via social groups created on the social networking site 'Facebook' by game fans. Participation in the research was determined by having played the game within the last six months before the interview.

The game players participating in the in-depth interviews were male mods users, in the age range between 20 and 28, with higher or secondary education level. Table 3 presents the detailed information about the in-depth interview subjects.

Table 3. Profile of individual deepened interviews' respondents (N = 5).

Specification	Sample (in %)
1. Gender	
a. Male	100
b. Female	-
2. Age	
a. 20–23 years	40
b. 24–28 years	60
3. Education	
a. Primary and junior high school	-
b. Vocational	20
c. Secondary	20
d. Higher	60
4. Form of game modding	
a. Mod users	100
b. Mod creators	-

Data source: own study.

In-depth interviews were conducted according to a previously-prepared scenario which consisted of three main sections: introduction and gaming experience, game modding, and demographic questions. In order to minimise the bias of qualitative research, a thematic network analysis of the textual data method was employed [53]. Recordings were made of the interviews, and the content was then transcribed. In order to obtain a high level of accuracy, as suggested by Miles and Huberman [54], all of the statements were written down in detail, including the breaks for reflection of the interviewees and incorrect statements. The text was dissected into manageable and meaningful text segments, and then coded according to a previous prepared code list. Once the text was coded, themes were abstracted from the coded text segments. The themes were arranged into groups of similar, coherent content, which allowed us to identify the basic ones and create a thematic network. After having constructed the network, the results were interpreted, and patterns were noticed.

The conducted in-depth interviews were planned as pilot studies. The term 'pilot studies', also referred to as 'feasibility studies', is used in two different manners in social science research, i.e., as small-scale version[s], or trial run[s], performed in preparation in preparation for the major study [55]. However, a pilot study can also be the pre-testing or 'trying out' of a particular research

instrument [56]. According to Chenail [57], qualitative researchers tend to construct study-specific sets of questions in the form of pilot studies in order to develop an insightful understanding of a situation from the insiders' perspectives, as a crucial element of good study design or of a particular phenomenon. Van Teijlingen and Hundley [58] state that, too often, research papers only refer to the pilot study. The feasibility studies fulfil a range of important functions; therefore, investigators should report their pilot studies.

Due to the fact that the individual deepened interviews presented rather interesting findings on game modding, the authors decided to conduct further research in the form of focus groups dedicated solely to this topic, in order to identify the activities and motives for both mod using and mod creating performed by game players.

Therefore, four focus group interviews were carried out. The groups were composed of 8 to 12 participants; 36 game players participated in the research. Three of the focus groups consisted of mods users, and the fourth consisted of mod creators. The total number of mod users exceeded the number of mod creators due to the skills required to introduce changes in graphic and sound elements, interference in the game code, etc. It is almost unfeasible for the average player to create mods [59]. It can be assumed that there are fewer mod creators than mod users amongst gamers.

The subjects of the research were mainly men, who more often used mods than they created them, aged 20 to 23, with secondary or higher education level. Table 4 illustrates the sample characteristics.

Table 4. Focus groups' sample characteristics (N = 36).

Specification	Sample (in %)
1. Gender	
a. Male	83
b. Female	17
2. Age	
a. 20–23 years	100
b. 24–28 years	-
3. Education	
a. Primary and junior high school	-
b. Vocational	-
c. Secondary	95
d. Higher	5
4. Form of game modding	
a. Mod users	78
b. Mod creators	22

Data source: own study.

Our method can be described as a purposeful sampling method [60]. According to Morse [61], this is one of four kinds of sampling used in qualitative research, among the nominated sample, the volunteer sample and the sample that consists of the total population. Directed by desire, purposeful sampling includes a range of variations of the phenomenon of the study [62], and is similar to a type of sampling called 'phenomenal variation', described by Sandelowski [63] as "decision often made a priori in order to have representative coverage of variables likely to be important in understanding how diverse factors configure as a whole". In the research in question, the authors interviewed informants with a broad general knowledge of modding, and whose experience is considered typical (i.e., easily available mods users). Then, as the study progressed, more specific information was gathered from the participants with particular knowledge (modders searching for advanced mods). Finally, participants with atypical experiences were sought (i.e., mod creators), so that the entire range of experiences and the breadth of the concept of the phenomena could be understood. The described process was suggested by Morse [61] and followed by Coyne [62]. According to Guest, Bunce and Johnson [64], purposive sampling is the most commonly used form of nonprobabilistic sampling, and the size typically relies on the concept of saturation, i.e., the point at which no themes or new information

are observed in the data. More interviews would follow similar patterns, and would not provide any new information about the research problem [65]. The questioning of the research allowed us to become familiar with game players' attitudes and opinions towards the process of game modding and value co-creation. Even though the study lacks stochastic confirmation, both the focus groups and the individual deepened interviews provide a qualitative method of data collection, and thus do not require statistical confirmation.

According to Poovey [66], "(...) there are limits to what the rationalized knowledge epitomized by statistics can do" [66]. Qualitative research can draw strong attention to detail, and has the potential to encircle both non-verbal and verbal behaviour, reveal denotations, to penetrate fonts, and find the difficulties and delicacy [67]. Focus groups have found applications in previous research concerning computer games. In 2011, Guo and Barnes investigated the factors affecting the purchase behaviour in virtual worlds, and decided to set semi-structured interview formats to allow participants to comfortably express their experiences, beliefs, and opinions. They also prepared a discussion guide which consisted of several sections, from introduction questions and questions exploring the goal of the study, to the summary of the interview [68].

In the present study on the modding activities of game users, the authors also employed semi-structured focus group interviews, and divided the discussion into four parts. In the introduction, the study subjects were asked general questions, such as what kind of computer games they had played and for how long. Then, the players were asked about having used official and unofficial add-ons offered by game producers. Further questions were focused on their individual motives for creating or using game mods. The discussions ended with summaries. The method of thematic network analysis of textual data was employed to provide a qualitative analysis of the research findings.

5. Research Findings

Individual Deepened Interviews

The respondents were asked why they had decided to join virtual worlds. They were most frequently motivated by interest in the game's topic (Euro Truck Simulator 2). The interviewed players also indicated hedonic motives ("enjoyment from playing") and social-exchange motives ("interaction with others").

Through the course of the interviews, the participants were asked about their game modding experience. The players frequently stated that they downloaded the add-ons, official as well as amateurish, in order to diversify the game. They find it boring to play a game over again, while game extensions can make games more exciting.

The following motives were mentioned by the researched players when they were asked about their motivations to use game mods:

- a. intrinsic motives (such as new experience, joy, curiosity);
- b. engagement and social affiliation;
- c. financial motives.

It can be noticed that game players become willingly engaged in game modding, by creating them or only downloading them, because mods substantially improve the quality of games. Game modifications may significantly increase the realism of the game, making it more enjoyable to play. Not only do they give the opportunity to visit places from the real world, but, moreover, some virtual items of the game become identical to objects in the real world. The studied subjects explained: "*modifications of the game are particularly important; they strongly expand the game. They allow it to be more complete, more real, and thus, more enjoyable*". Some Euro Truck Simulator 2 players perceive branded add-ons as elements as making the game more attractive ("they really give it such a nice atmosphere"). The players often mentioned that they downloaded an unofficial mod called 'Poland Rebuilding', which extended the maps. They could then visit Polish cities, towns, and villages, and see their specific places and buildings.

In addition, modding allows mod creators and mod users to integrate within a kind of community, a so called ‘modding community’. During the interviews, the participants mentioned that *“there is a huge community of this kind, where people do such things (create mods), share, the others download them, and test”; “there is a special website where you can upload your mod”; and “there are unofficial forums, where you can find plenty of mods”*. There are mods for Euro Truck Simulator 2 which make it possible to play with others. Firstly, players can use a multiplayer option (*“there are a lot of modifications to this game, among others there are multiplayer options and people can play together”*). Secondly, game mods facilitate players’ communication: *“in one of the multiplayer options, there is a voice chat, or a text chat, but also with some additional software, there is an app called TeamSpeak, which is very useful”*.)

Users who only download add-ons created by other players have the opportunity to support their activities financially (*“you can pay a certain amount of money for downloading and you can download as many mods as you want”, “such gaming add-ons can be bought and sold for real money”*). The quoted statements suggest that some creators can earn money through game modding, which is the economic-driven motive to co-create.

The above-mentioned motives refer to Fernandes and Remelhe’s model [13], and cover three out of four potential motives, i.e., financial, intrinsic, and social motives. The researched subjects did not invoke knowledge motives (improvement of skills, self-development).

A focus was put on branding. Amongst diversified game elements, players may personalize their trucks. One of the most popular activities is changing the trucks’ features in the Euro Truck Simulator 2 game. Moreover, players may introduce real brands into the virtual worlds, like preferred retailers (*“Lidl, Biedronka, CCC”*), restaurants (*“McDonald’s or KFC”*) and petrol stations (*“Orlen, Shell, BP, Lotos”*). It was noticed that the brands placed in the game play an important role in the branding process, moving customers from brand awareness and recognition to brand supremacy [69]. According to Nobre and Ferreira [70], games are important branding tools because they allow the collection of data, opinions, and ideas from consumers on products, forms, and moments of consumption, as well as helping with market segmentation and consumer profile definition. The appearance of brands inside the game can promote positive word-of-mouth, brand experiences, and brand advocacy, and can also affect customers to visit the store [70]. Moreover, placing brands inside virtual worlds enables the shaping of communication between consumers and brands [70]. With regards to this fact, it may be noted that game modding may be a marketing tool of significant importance that companies may use to influence online generations.

6. Focus Groups

All of the researched subjects were familiar with game modding, and most of them declared that they used mods while playing online games (3 out of 4 focus groups, 28 participants altogether), while 8 respondents (1 focus group) confirmed that they created game mods. Due to the fact that they perform different activities (active creators vs passive users), their motives vary, and thus will not be analysed from the same perspective.

All of the studied participants stated they have been playing online games for a long time: *“for ages”, “since I was 11 years old”, “since I was a teenager”, “a half of my life”*. When they were asked about the games they play, the respondents mentioned Massively Multiplayer Online Games as the most popular ones (including titles such as Matrix Online, World of Warcraft, Star Wars Galaxies Everquest, League of Legends or Guild Wars), First person shooters (Counter Strike, Halo 2, Quake 4 or Battlefield), Arcade games (Pac Man), Action and adventure games (The Witcher, The Legend of Zelda, God of War, Tomb Raider, The Sinking City), Strategy games (Battle for the Galaxy, Warhammer 2, Company of Heroes), Sport Games (Pro Evolution Soccer, FIFA), Simulation games (Euro Track Simulator, The Sims), and others.

After the introduction, the participants were asked about their use of any official add-ons. They all stated that they often use them, when they are available, because *“they extend the game, make it more diversified”, “some of the add-ons are like a new game, so they make a huge difference”, “they sometimes add*

new topics and plots to the old game”, “sometimes the add-ons offer corrections for some game errors” or even “significantly prolong the game’s life span, giving it a revival, making the game back in fashion again”.

The respondents also mentioned that not all game producers provide players with official add-ons. If not, they often search for unofficial ones. Although some of the studied players act ethically (*“am I the only person paying for the games and add-ons? I want to play legally to support the game producers”*), many of them are eager to use mods to *“improve how the game runs”, “enhance the game graphics”, “making changes to the text, for instance choosing a language that is not officially available”.*

It was noted that game producers present different attitudes towards unofficial mods created by game users—they cover the whole spectrum, from penalizing each mod user who decided to download any mod (*“I was once banned after the game upgrade, the mods I downloaded were found I could not play for some time, even if I did not introduce any significant amendments to the game, I just changed the colour of hair of my game character”*) to providing the modders with game codes (*“some game producers offer a regular game and they hope modders can make it better. Minecraft is a good example. Nobody would play it if there were no mods to it. But now, the producer does not have to do anything, introduce any changes to the game, there are so many good mods, the producer could not offer anything better”; “sometimes a mod turns to be a new, catchy game. As far as I know Counter Strike was a mod to Half Life, and now it is immensely popular”*).

The studied mod users were asked about their motives to use game mods. They presented a wide range of specific motives, but they can be grouped into three main categories:

- a. Perceived enjoyment: *“it is enjoyable to play a game I like, with mods even more enjoyable”, “because I like playing this game, with mods there is more fun!”, ‘it is interesting to play something new”;*
- b. Concentration: *“when the mods change the game, it seems to be a brand new one and I am so focused on the changes caused by the mods, I do not realize the time that has elapsed”;*
- c. Engagement and social affiliation: *“I like multiplayer games, I especially like mods that make it possible to play with other players”, “I usually use mods that are recommended by other users”, “I joined a few game communities, we discuss various modes and how they enrich the players’ experience. I like that others take my opinions into considerations. But I have to test the mods to give accurate and reliable information”.*

As far as mod creators are concerned, they declared partially different motives for their engagement in game modding. The motives were grouped into the following categories:

- a. Perceived enjoyment and pride: *“for fun”, “it is exciting when you can. It feels good when you are capable of creating a mod, on the other hand it is much easier to create a mod than a new game from the scratch”, “It is great, when the game producer applies your mod in the game”;*
- b. Creativity: *“I like creating something new”, “yes, the creativity and inventiveness that are developed by making mods”, “people can use their talents”;*
- c. Epistemic curiosity: *“it is a learning experience”, “you can learn something new using tools shared by others, and then when you become better, more fluent and proficient, you can create your own mods, completely new ones”, “when you think of making games it is good to start with mods first”,*
- d. Engagement and social affiliation: *“there are websites, where modders are associated, you can upload a file with a mod, and the community evaluates the mod based, and then it is recommended and everyone starts downloading it”, “you can help yourself and others to experience greater fun by playing a game with mods”*

Both mod users and mod creators were asked about the main beneficiaries of game modding. They unanimously pointed at four of them: those who use game mods (*“mods make games better, of higher quality, offer new functionalities”*), those who create mods (*“we can develop our skills and have fun”, they can do something to be proud of when other game players appreciate the mod”*), the game producers (*“they can take advantage of other modders ideas and talents”*), and, finally, other companies, especially when modding involves using real brands in the virtual world (*“to add the game some reality” or to “present brands we like in real life, so we could have them in games”*). When they were asked about the real

brands' presence in the game, some of the studied subjects were favourably disposed towards the idea; nevertheless, some mentioned that it depends on the game.

7. Discussion

The results of the conducted research, as well as the literature study, allowed us to note that customers are seen as an inseparable part of the gaming industry; they play active roles in value co-creation and deliver an extra value to the market through game modding activities. Of course, the level and scope of their engagement may differ, which brings forth the answer to the first of the research questions about the extent to which the game players are willing to engage in value co-creation behaviours by using or creating game modding.

Mod users not only utilize mods, but also comment on them, providing feedback to mod creators, recommend mods to other game players, and share them. Highly engaged customers go one step further and create mods, offering extra value to the game, the game producers and the other players. Creating mods requires extra skills and knowledge, time, and effort [71]. Not every game player is willing and able to create mods. A general supposition may arise that game players are eager to use, recommend or even create mods, unless doing so is banned or penalized by game producers. Co-creation may be considered to be an important manifestation of customer engagement [13], and the level of engagement differs from mod users to mod creators.

The heterogeneity of the customers and the variability in their roles are crucial issues for finding out what motives are the main drivers for game modding. Much of research has focused on the various underlying motivators behind customer contribution from the cost–benefit perspective [12]. The previously-held rational perspectives will be taken into consideration; nevertheless, there are many psychological and social factors that are also responsible for customer participation in co-creation.

In response to the second research question, a variety of motives were discovered which derive from game modding as a co-creation activity. For mod users, the main motives for values of co-creation are perceived enjoyment, the opportunity to concentrate on a game that is fun to play, and social affiliation and engagement. Mod creators, however, are driven by the perceived enjoyment and pride of their mods, the creativity that may be appreciated by others, epistemic curiosity (i.e., the ability to learn something new), and social affiliation and engagement. The motives that resulted from the study, are consistent with the motives identified by Koo et al. [72], but may also be referred to the study of Roser et al. [21], as presented in the theoretical part of the paper: the motivation to innovate alone (perceived intrinsic pride and enjoyment, creativity and epistemic curiosity), the motivation to contribute to community and social exchange motives (engagement and social affiliation), and the motivation to innovate directly with companies (the economic-driven motive to co-create) [22,73,74].

While referring to the consumption value theory introduced by Sheth et al. [75], Kim and Choi [76] presented an opinion that modders create or utilize any user generated content because they are driven by specific values: functional values (influencing the game functionalities and ensuring higher quality), emotional values (pride, excitement), and social values (helping others and making a positive contribution to a gaming community).

What is interesting is that there are many beneficiaries of value co-creation by game modding: customers who use mods, those who create modes, online game communities, and game producers. This conclusion allows us to answer the third research question. Through individual and collaborative effort, customers can co-create value for themselves, other members, and organizations, extending customers' engagement beyond dyadic interactive experiences to a social dimension of the phenomenon [71,72,77].

8. Conclusions

In conclusion, consumers are involved in a variety of positive, discretionary behaviours directed towards other companies and customers. By performing extra-role behaviours, they actively participate in the development of games and the design of game mods, becoming value co-creators. This research

suggests that customers' inclination to engage in modding varies between mod using and mod creating, and depends on their skills, experience, and knowledge. Game modding, as an extra-role behaviour, is driven by specific motives. It can be noted that these motives differ, according to the conducted research, depending on the level of the customers' engagement. Mod users show perceived enjoyment and concentration, as well as engagement and social affiliation as the main antecedents of customer value co-creation, while mod creators are also driven by epistemic curiosity, creativity, and pride. The study also identified the main beneficiaries of game modding, i.e., mod users, mod creators (as customers), game developers, and intermediaries (as companies operating on the gaming market). Intermediaries are not usually mentioned when the beneficiaries of modding are discussed in literature.

This study may enrich our understanding of customers' inclinations to engage in modding on both the theoretical and managerial levels. This study provides tentative evidence for the motives which are the key drivers for value co-creation in the form of game modding. The research supports the theory of extrinsic and intrinsic motivation, represented by Holbrook's model of consumer value co-creation based on motivation theory [26], as well as Maslow's hierarchy of needs, as referred to by Fernandes and Remelhe [13].

At a management level, the ongoing study provides useful actionable guidance to innovation program managers on how to create an experience which motivates participants to engage in co-creation in virtual communities [75]. Firms need to learn how to approach their customers' needs outside of normal exchange processes. By enhancing the motivators previously mentioned, firms can stimulate consumers' co-creation. Furthermore, brand placement may become an important tool of communication with online communities [13].

Several limitations apply to the study's findings. A lack of quantitative evaluation impedes the generalisability beyond theory. Furthermore, the study did not use multiple samples of consumers, such as those who are engaged and those who are not engaged in the full range of co-creation activities. This study's newly offered insights suggest that empirical work is needed along the continuum of forms of value co-creation in order to further our understanding of the consumer's motivation to participate in game modding as a form value co-creation. This leaves space for a future study.

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References

1. Prahalad, C.K.; Ramaswamy, V. Co-creation experiences: The next practice in value creation. *J. Interact. Mark.* **2004**, *18*, 5–14. [[CrossRef](#)]
2. Gummerus, J.; Liljander, V.; Weman, E.; Pihlström, M. Customer engagement in a Facebook brand community. *Manag. Res. Rev.* **2012**, *35*, 857–877. [[CrossRef](#)]
3. Aggarwal, N. Investigating Moderating Role of Customer Participation in Customer-based Corporate Reputation and Customer Citizenship Behavior. *FIIB Bus. Rev.* **2014**, *3*, 64–75. [[CrossRef](#)]
4. Bettencourt, L. Customer voluntary performance: Customers as partners in service delivery. *J. Retail.* **1997**, *73*, 383–406. [[CrossRef](#)]
5. Groth, M. Customers as Good Soldiers: Examining Citizenship Behaviors in Internet Service Deliveries. *J. Manag.* **2005**, *31*, 7–27. [[CrossRef](#)]
6. Yi, Y.; Gong, T.; Lee, H. The Impact of Other Customers on Customer Citizenship Behavior. *Psychol. Mark.* **2013**, *30*, 341–356. [[CrossRef](#)]
7. Yi, Y.; Gong, T. The ascendants and consequences of service and customer citizenship and badness behaviour. *Seoul J. Bus.* **2006**, *12*, 145–175.

8. Rosenbaum, M.S.; Massiah, C.A. When Customers Receive Support from Other Customers: Exploring the Influence of Intercustomer Social Support on Customer Voluntary Performance. *J. Serv. Res.* **2007**, *9*, 257–270. [[CrossRef](#)]
9. Balaji, M. Managing customer citizenship behavior: A relationship perspective. *J. Strat. Mark.* **2014**, *22*, 222–239. [[CrossRef](#)]
10. Dewalska-Opitek, A.; Mitreġa, M. “Appreciate me and i will be your good soldier”. The exploration of antecedents to consumer citizenship. *Eng. Manag. Prod. Serv.* **2019**, *11*, 48–59. [[CrossRef](#)]
11. Kambil, A.; Ginsberg, A.; Bloch, M. *Re-Inventing Value Propositions*; NYU Working Paper 2451/14205; Stern School of Business, New York University: New York, NY, USA, 1996; Available online: <https://ssrn.com/abstract=1284822> (accessed on 16 September 2020).
12. Agrawal, A.K.; Rahman, Z. Roles and Resource Contributions of Customers in Value Co-creation. *Int. Strat. Manag. Rev.* **2015**, *3*, 144–160. [[CrossRef](#)]
13. Fernandes, T.; Remelhe, P. How to engage customers in co-creation: Customers’ motivations for collaborative innovation. *J. Strat. Mark.* **2015**, *24*, 311–326. [[CrossRef](#)]
14. Roser, T.; DeFillippi, R.; Samson, A. Managing your co-creation mix: Co-creation ventures in distinctive contexts. *Eur. Bus. Rev.* **2013**, *25*, 20–41. [[CrossRef](#)]
15. Ind, N.; Coates, N. The meanings of co-creation. *Eur. Bus. Rev.* **2013**, *25*, 86–95. [[CrossRef](#)]
16. Grönroos, C. Conceptualising value co-creation: A journey to the 1970s and back to the future. *J. Mark. Manag.* **2012**, *28*, 1520–1534. [[CrossRef](#)]
17. Xie, C.; Bagozzi, R.P.; Troye, S.V. Trying to prosume: Toward a theory of consumers as co-creators of value. *J. Acad. Mark. Sci.* **2007**, *36*, 109–122. [[CrossRef](#)]
18. Zwick, D.; Bonsu, S.K.; Darmody, A. Putting Consumers to Work: Co-creation and new marketing governmentality. *J. Consum. Cult.* **2008**, *8*, 163–196. [[CrossRef](#)]
19. Wikström, S. Value creation by company-consumer interaction. *J. Mark. Manag.* **1996**, *12*, 359–374. [[CrossRef](#)]
20. Kim, K.; Byon, K.K.; Baek, W. Customer-to-customer value co-creation and co-destruction in sporting events. *Serv. Ind. J.* **2019**, *40*, 633–655. [[CrossRef](#)]
21. DeFillippi, R.; Roser, T. Aligning the co-creation project portfolio with company strategy. *Strategy Theory* **2014**, *42*, 30–36. [[CrossRef](#)]
22. Roberts, D.; Hughes, M.; Kertbo, K. Exploring consumers’ motivations to engage in innovation through co-creation activities. *Eur. J. Mark.* **2014**, *48*, 147–169. [[CrossRef](#)]
23. Lusch, R.F.; Vargo, S.L. Service-dominant logic: Reactions, reflections and refinements. *Mark. Theory* **2006**, *6*, 281–288. [[CrossRef](#)]
24. Etgar, M. A descriptive model of the consumer co-production process. *J. Acad. Mark. Sci.* **2007**, *36*, 97–108. [[CrossRef](#)]
25. Jawecki, G.; Füller, J. How to use the innovative potential of online communities? Netnography—An unobtrusive research method to absorb the knowledge and creativity of online communities. *Int. J. Bus. Process. Integr. Manag.* **2008**, *3*, 248. [[CrossRef](#)]
26. Holbrook, M.B. Consumption experience, customer value, and subjective personal introspection: An illustrative photographic essay. *J. Bus. Res.* **2006**, *59*, 714–725. [[CrossRef](#)]
27. Tung, V.W.S.; Chen, P.-J.; Schuckert, M. Managing customer citizenship behaviour: The moderating roles of employee responsiveness and organizational reassurance. *Tour. Manag.* **2017**, *59*, 23–35. [[CrossRef](#)]
28. Fowler, J.G. Customer citizenship behaviour: An expanded theoretical understanding. *Int. J. Bus. Soc. Sci.* **2013**, *4*. [[CrossRef](#)]
29. Elster, J. Altruistic Behavior and Altruistic Motivations. In *Handbook of the Economics of Giving, Altruism and Reciprocity*; Elsevier: Amsterdam, The Netherlands, 2006; Volume 1, pp. 183–206. [[CrossRef](#)]
30. Kotler, P.H. *Marketing Management: Analysis, Planning, Implementation, and Control*; Prentice-Hall International: Upper Saddle River, NJ, USA, 1994.
31. Ryan, R.M.; Deci, E.L. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am. Psychol.* **2000**, *55*, 68–78. [[CrossRef](#)]
32. Dewalska-Opitek, A.; Bilińska-Reformat, K. Transport Management Online Games as the Example of Knowledge Sharing Among Drivers. In *Research and the Future of Telematics; 20th International Conference on Transport Systems Telematics*; Springer: Berlin, Germany, 2020; pp. 217–230. [[CrossRef](#)]
33. Blau, P.M. *Exchange and Power in Social Life*; John Wiley and Sons: New York, NY, USA, 1964.

34. Patterson, P.; Smith, T. A cross-cultural study of switching barriers and propensity to stay with service providers. *J. Retail.* **2003**, *79*, 107–120. [CrossRef]
35. Falk, A.; Fischbacher, U. A theory of reciprocity. *Games Econ. Behav.* **2006**, *54*, 293–315. [CrossRef]
36. Moshirnia, A. The Educational Potential of Modified Video Games. *Issues Informing Sci. Inf. Technol.* **2007**, *4*, 511–521. [CrossRef]
37. Sotamaa, O. When the Game Is Not Enough: Motivations and Practices Among Computer Game Modding Culture. *Games Cult.* **2010**, *5*, 239–255. [CrossRef]
38. Lee, D.; Lin, D.; Bezemer, C.-P.; Hassan, A.E. Building the perfect game—An empirical study of game modifications. *Empir. Softw. Eng.* **2020**, *25*, 2485–2518. [CrossRef]
39. Wallace, R. Modding: Amateur authorship and how the video game industry is actually getting it right. *BYU L. Rev.* **2014**, *1*, 219.
40. Loh, C.S.; Byun, J.H. Modding Neverwinter Nights into Serious Games. In *Digital Simulations for Improving Education: Learning through Artificial Teaching Environments*; IGI Global: Hershey, PA, USA, 2009; pp. 408–426. [CrossRef]
41. Nardi, B.; Kallinikos, J. Technology, Agency, and Community: The Case of Modding in World of Warcraft. In *Industrial Informatics Design, Use and Innovation: Perspectives and Services*; IGI Global: Hershey, PA, USA, 2010; pp. 174–186. [CrossRef]
42. Hong, R. Game modding, prosumerism and neoliberal labour practices. *Int. J. Commun.-Us.* **2013**, *7*, 984–1002.
43. Jerz, D.G. Somewhere Nearby is Colossal Cave. *Digit. Humanit. Q.* **2007**, *1*, 1–89.
44. El-Nasr, M.S.; Smith, B.K. Learning through game modding. *Comput. Entertain.* **2006**, *4*, 7. [CrossRef]
45. Targett, S.; Verlysdonk, V.; Hamilton, H.J.; Hepting, D. A study of user interface modifications in World of Warcraft. *Game Stud.* **2012**, *12*.
46. G2A.COM Limited. Available online: <https://www.g2a.com/pl-pl/mod-and-play-pc-steam-gift-europe-i10000195153001> (accessed on 29 September 2020).
47. Herman, A.; Coombe, R.J.; Kaye, L. YOURSECOND LIFE? *Cult. Stud.* **2006**, *20*, 184–210. [CrossRef]
48. MacKenzie, K.; Buckby, S.; Irvine, H. Business research in virtual worlds: Possibilities and practicalities. *Account. Audit. Account. J.* **2013**, *26*, 352–373. [CrossRef]
49. Papagiannidis, S.; Bourlakis, M.; Li, F. Making real money in virtual worlds: MMORPGs and emerging business opportunities, challenges and ethical implications in metaverses. *Technol. Forecast. Soc. Chang.* **2008**, *75*, 610–622. [CrossRef]
50. Hackman, E.; Björkqvist, U. Modders of Skyrim: Motivations and Modifications: A Qualitative Study of What Motivations and Modifications the Modders of Elder Scrolls: Skyrim Exhibit. Master's Thesis, Södertörn University, Flemingsberg, Stockholm, Sweden, 2014.
51. Scacchi, W. Modding as an open source approach to extending computer game systems. In *IFIP International Conference on Open Source Systems*; Springer: Berlin/Heidelberg, Germany, 2011; pp. 62–74. [CrossRef]
52. Henson, R.K.; Roberts, J.K. Use of Exploratory Factor Analysis in Published Research: Common errors and some comment on improved practice. *Educ. Psychol. Meas.* **2006**, *66*, 393–416. [CrossRef]
53. Attride-Stirling, J. Thematic networks: An analytic tool for qualitative research. *Qual. Res.* **2001**, *1*, 385–405. [CrossRef]
54. Miles, M.B.; Huberman, M.A. *Qualitative Data Analysis*; Trans Humana: Białystok, Poland, 2000; p. 54.
55. Polit, D.F.; Beck, C.T.; Hungler, B.P. *Essential of Nursing Research, Methods, Appraisal and Utilization*, 5th ed.; Lippincott Williams & Wilkins: Philadelphia, PA, USA, 2001; p. 467.
56. Baker, T.L. *Doing Social Research*, 2nd ed.; McGraw-Hill Inc.: New York, NY, USA, 1994; pp. 182–183.
57. Chenail, R.J. Interviewing the Investigator: Strategies for Addressing Instrumentation and Researcher Bias Concerns in Qualitative Research. *Qual. Rep.* **2011**, *16*, 255–262.
58. Van Teijlingen, E.R.; Hundley, V. The importance of pilot studies. *Soc. Res. Update* **2001**, *35*. Available online: <http://sru.soc.surrey.ac.uk/SRU35.html> (accessed on 5 October 2020). [CrossRef]
59. Filiciak, M. Modification of computer games made by users. *Pop. Cult.* **2003**, *3*, 67–73.
60. Miles, M.B.; Huberman, A.M. *Qualitative Data Analysis*, 2nd ed.; Sage: Thousand Oaks, CA, USA, 1994; p. 27.
61. Morse, J.M. Designing Funded Qualitative Research. In *Handbook for Qualitative Research*; Denzin, N., Lincoln, Y., Eds.; Sage: Thousand Oaks, CA, USA, 1994; Volume 129, pp. 220–235.
62. Coyne, I.T. Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *J. Adv. Nurs.* **1997**, *26*, 623–630. [CrossRef] [PubMed]

63. Sandelowski, M. Sample size in qualitative research. *Res. Nurs. Health* **1995**, *18*, 179–183. [[CrossRef](#)] [[PubMed](#)]
64. Guest, G.; Bunce, A.; Johnson, L. How many interviews are enough? An experiment with data saturation and variability. *Field Method*. **2006**, *18*, 59–82. [[CrossRef](#)]
65. Jemielniak, D. (Ed.) *Qualitative Research. In Approaches and Theories*; PWN: Warsaw, Poland, 2012.
66. Poovey, M. *Making a Social Body: British Cultural Formation*; University of Chicago Press: Chicago, IL, USA, 1995; pp. 1830–1864.
67. Gephardt, R. What is qualitative research and why is it important? *Acad. Manag. J.* **2004**, *7*, 454–462.
68. Guo, Y.; Barnes, S. Purchase behavior in virtual worlds: An empirical investigation in Second Life. *Inf. Manag.* **2011**, *48*, 303–312. [[CrossRef](#)]
69. Barreda, A.A.; Bilgihan, A.; Nusair, K.; Okumus, F. Generating brand awareness in Online Social Networks. *Comput. Hum. Behav.* **2015**, *50*, 600–609. [[CrossRef](#)]
70. Nobre, H.; Ferreira, A. Gamification as a platform for brand co-creation experiences. *J. Brand Manag.* **2017**, *24*, 349–361. [[CrossRef](#)]
71. Van Doorn, J.; Lemon, K.N.; Mittal, V.; Nass, S.; Pick, D.; Pirner, P.; Verhoef, P.C. Customer Engagement Behavior: Theoretical Foundations and Research Directions. *J. Serv. Res.* **2010**, *13*, 253–266. [[CrossRef](#)]
72. Koo, D.M.; Lee, S.H.; Chang, H.S. Experimental motives for playing online games. *J. Converg. Inf. Technol.* **2007**, *2*, 37–48.
73. Sousa, M. Modern Serious Board Games: Modding Games to Teach and Train Civil Engineering Students. In Proceedings of the 2020 IEEE Global Engineering Education Conference (EDUCON), Porto, Portugal, 27–30 April 2020; pp. 197–201. [[CrossRef](#)]
74. Brodie, R.J.; Ilic, A.; Juric, B.; Hollebeek, L.D. Consumer engagement in a virtual brand community: An exploratory analysis. *J. Bus. Res.* **2013**, *66*, 105–114. [[CrossRef](#)]
75. Sheth, J.N.; Newman, B.I.; Gross, B.L. Why we buy what we buy: A theory of consumption values. *J. Bus. Res.* **1991**, *22*, 159–170. [[CrossRef](#)]
76. Kim, H.S.; Choi, B. The effects of three customer-to-customer interaction quality types on customer experience quality and citizenship behavior in mass service settings. *J. Serv. Mark.* **2016**, *30*, 384–397. [[CrossRef](#)]
77. King, D.L.; Delfabbro, P.H.; Billieux, J.; Potenza, M.N. Problematic online gaming and the COVID-19 pandemic. *J. Behav. Addict.* **2020**, *9*, 184–186. [[CrossRef](#)]

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