Success Factors of Cloud-Gaming Services

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List of Abbreviations

CSP	Cloud-Service-Provider
CGS	Cloud-Gaming-Service

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Abstract

In 2010 OnLive launched the world's first commercial cloud-gaming-service. Ever since, cloud-gaming is considered as the "future" of gaming by many players in the multi-billion-dollar industry of gaming. This study aims to research possible success factors of the innovative business model and reveal the research questions, namely which drivers increase or hinder the utilization of cloud-gaming. By conducting qualitative (10 interviews) and quantitative research (203 viable answers) among a broad sample across German gaming communities' meaningful insights were exposed. It was found that the service, at current state, is, due to underlying technology, not suitable for all gaming genres, mainly because of its dependency on latency. Service that goes beyond consumers' expectations eventually causes great interest in the service, especially in form of access to 'AAA'-titles. With cloud-gaming-services, commonly in form of a digital product, consumers are concerned with not physically owning a device. Nonetheless, CEOs of the largest enterprises in different industries are optimistic that cloud-gaming will, with progress in technology, soon be more appreciated within the communities and become the future of gaming.

Em 2010 a OnLive lançou o primeiro serviço comercial de jogos de nuvens do mundo. Desde então, os jogos nublados são considerados como o "futuro" dos jogos por muitos jogadores da indústria do jogo. Este estudo visa investigar possíveis factores de sucesso do modelo de negócio inovador e revelar novamente as questões de investigação, nomeadamente quais os factores que aumentam ou dificultam a utilização dos jogos de azar com as nuvens. Através da realização de investigação qualitativa (10 entrevistas) e quantitativa (203 resultados viáveis) entre uma ampla amostra das percepções significativas das comunidades de jogo alemãs foram expostas. Verificou-se que o serviço, no estado actual, não é, devido à tecnologia subjacente, adequado para todos os géneros de jogos, principalmente devido à sua dependência da latência. Um serviço que vai além das expectativas dos consumidores acaba por causar grande interesse no serviço, especialmente sob a forma de acesso às legendas "AAA". Com os serviços de jogos de nuvens, geralmente sob a forma de um produto digital, os consumidores preocupam-se em não possuir fisicamente um dispositivo. No entanto, os CEOs das maiores empresas em diferentes indústrias estão optimistas de que os "cloud-gaming", com o progresso da tecnologia, serão em breve mais apreciados dentro das comunidades e tornar-se-ão no futuro dos jogos.

1 Introduction

The video game industry is the result of continuous innovation. Zichermann and Cunningham propose that the concept of "gamification" indicates that the psychological factors involved in the game will affect the enthusiasm and stimulate the vitality of consumers (2011). The time invested into the hobby of “gaming” has rapidly increased over the past years. Also, among adults' video gaming has become a very popular leisure activity (Perrin, 2018). A study has shown that the amount of time spent playing video games has increased steadily, from 5.1 h/week in 2011 to 6.5 h/week in 2017 (Nielson Company, 2017). This study is conducted with the emphasis to analyse the potential future of the gaming industry through cloud-gaming and to reveal its success factors. These factors will help to determine what consumers demand from service providers to utilize the service additionally or as an alternative to existing gaming solutions. Providing a general understanding of the business model and along with a general industry and technical overview will assist on this matter.

1.1 Problem Definition and Objectives

In comparison to other industries, there are only a few that develop and evolve with such speed like the gaming industry. Through progress in hardware and software many cloud-based services have emerged over the years, cloud-gaming services can be found among those. Although its usage is yet comparably low, its market value already measures $1,5bn in 2021 expecting to reach $6,5bn by 2024 (VentureBeat., 2021). Despite its promising future, cloud gaming faces several crucial challenges, like latency issues, that must be addressed through research and further technological progress. Upon meeting the requirements of the market, cloud-gaming can reach its full potential and attract more gamers, game developers and providers.

To date, there is barely any literature available that focuses on exposing the success factors for the innovative service of cloud-gaming. Thus, the proposed study will focus on a specific research question:

What drivers facilitate consumers' willingness to utilize cloud-gaming-services?

What drivers hinder consumers' willingness to utilize cloud-gaming-services?

With the emphasis of revealing meaningful insights on the topic some key aspects of gaming in general and cloud-gaming will be analysed. In detail, gaming related engagement, customization of services, scope of service and the technical requirements are of major importance in this case. Firstly, cloud-services will briefly be introduced as well as the technical background of cloud-gaming and the corresponding business model. Moreover, this study will explore on the current gaming industry along with its trends. To date, cloud gaming services appear in

multiple variations to their business model, thus before evaluating the qualitative research three known cloud-gaming services and their business model will be explained and displayed to the reader to further build knowledge on the topic. For this study, Germany will be used as the representative market.

With $5,9bn in revenue, Germany has the biggest share in the video game market within Europe and thus appears to be a suitable representative for this study (Newzoo, 2020).

2 Literature Review

To answer the previously mentioned research questions the paper will be approached by evaluating existing literature and other studies within the field of interest. The theoretical background will firstly introduce the reader to cloud-services in general, including its technological background and the resulting advantages and opportunities. Moreover, brief insights into the gaming industry and its trending platforms will be displayed. Upon understanding the reasoning behind the billion-dollar industry, this paper will dwell into a detailed analysis of the business model of cloud-gaming services and its variations.

2.1 Cloud-Services

Cloud computing is an application-based software infrastructure that stores data on remote serves, which can be accessed through the internet. To understand how cloud computing works, it can be divided into front-end and backend. The front end enables a user to access data stored in the cloud using an internet browser or a cloud computing software. However, the primary component of cloud computing – responsible for securely storing data and information – is the backend. It comprises servers, computers, databases, and central servers.

When IT giants like Google, Microsoft and Amazon began to offer storage and computing power as a service in the late 2000s they opened a huge market. Today this technology is commonly used in public households to store and access pictures, videos, or other documents. The IT-infrastructure behind such a service is basic and CSPs (Cloud-Service-Provider) commonly offer three different services:

- Infrastructure as a Service (IaaS): provide basic access to storage, networking, servers, or other computing resources (i.e., Microsoft Azure, OpenStack)
- Platform as a Service (PaaS): provide an environment (platform) for their customers to build and deliver applications (i.e., Amazon Web Services)

- Software as a Service (SaaS): build, run, and host applications deliver over the internet, which customers pay to access (i.e., Zoom, Monday)

It is important to mention that all cloud-based services are reliant on internet and arguably a strong and stable connection. Thus, to ensure a satisfactory response time and guarantee stability to each request issued by the user cloud-services demand low latency (Peng, Gokop and Yu, 2021). Nevertheless, upon successful integration and execution cloud-services can provide major benefits for end-consumers according to IBM (2018). In the context of this study the following benefits are of interest:

- Efficiency / Accessibility: applications can be accessed from virtually any internet-connected device. Moreover, the speed of cloud-servers is unmatched by local devices.
- Flexibility: Large storage space along with customizable on demand tools and functions.

To further evaluate on the topic of cloud-gaming the technological background must be understood and evaluated as it will be determining for the gaming experience of users. In detail, one must reveal how big the impact of latency could be on the overall gaming experience created by cloud-services. Therefore, the following section will explain the technological background of cloud-gaming.

2.1.1 Cloud-Gaming

While most people associate gaming with a PC or a console the reality appears a lot different nowadays. In cloud-gaming some gamers have already found their new way of gaming which enables them to enjoy their favourite gaming titles in highest resolution from anywhere in the world with almost any device. In an interview with the New York Times Phil Eisler, VP of Nvidea, leading manufacturer in graphic processing units, said “we think it’s the way of the future” (New York Times, 2021). The broad vision behind cloud-gaming-services is to create one place for all different ways games are played.

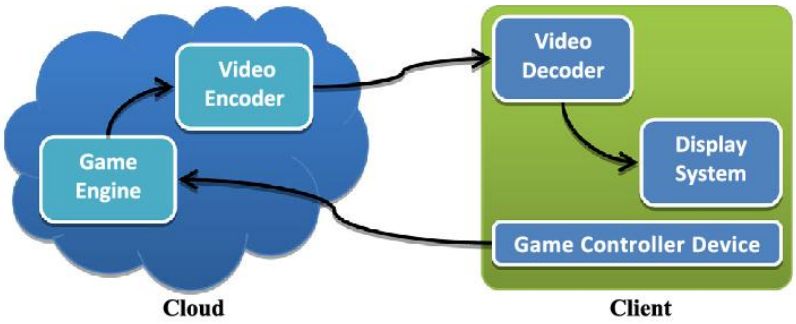

Figure 1. Cloud-Gaming Concept Diagram (Ahmadi, Zadtootaghaj, Hashemi et. al., 2014)

At its core cloud-gaming can also be described as game streaming which works like commonly known streaming systems like Netflix but instead of streaming movies customer would stream their video game. Figure 1 provides a simplified diagram of the technology behind cloud-gaming. Customers gain access to a virtual machine that is running on a cloud-server, probably located in a different country or even continent. As the server will deliver the processing power players need, the only thing required from customers is a device that is compatible with the technology and a display suitable for streaming (Jurgelionis et al., 2009). Phil Harrison, VP of Google, stated in 2019 during the Game Developer Conference that Googles cloud-gaming service "Google Stadia" would be able to stream and access this technology along any screen reaching from desktops, laptops, TVs, tablets, and mobile-phones (Google, 2019).

As previously mentioned, cloud-services are reliant on latency to ensure a fluent experience and appropriate response time, especially in gaming these attributes are crucial for an enjoyable gaming experience. Also called "lag", high-latency results in a delay in getting data from the device in your hands, i.e., a controller, to a computer in the cloud- and back again. In case of high latency players will not get a real-time response from the game as the servers are still processing their orders (Sun, 2019). Therefore, the consumers experience with cloud-gaming is extremely susceptible to response latency (Lee, Yeng-Ting, Chen, et al., 2012). As this represents a potential obstacle for cloud-gaming-services it can be interpreted as a driver for consumers not to utilize the service.

The previous display of the technical functioning behind cloud-services in general and cloud-gaming clearly illustrates the characteristic of not being a device but instead completely untouchable. "Digital goods can be bought online, consumed immediately, and used without worry for their degradation or loss" (Atasoy & Morewedge, 2017). The fast progression of technology has largely impacted the digitalization of many products and goods consumers use on a regular basis, one of them is gaming. Although digitalization brings many advantages

physical goods appear to have greater allure overall (Pew Research Center, 2016). According to Atasoy and Morewedge, consumers interpret digital goods different than physical. In detail, customers do not feel the same type of ownership for digital goods as for physical goods which leads them to inflate their value. Thus, digital goods and eventually services like cloud-gaming-services are unable to enjoy this type of premium consumers associate with physical goods and products (2017).

Applying this information to the gaming industry implies that cloud-gaming-services, who are predominantly run via apps or other types of software applications, might not be valued as much as a PC or consoles like the PlayStation. Eventually this fundamental characteristic of cloud-gaming-services can be revealed as a driver for consumers to not utilize the service after all.

2.2 Cloud-Gaming as a Business

Over the years physical platforms have transformed to digital and so has entertainment turned from a commodity into a service (Davidovici-Nora, 2013). By doing so cloud-gaming enables games to be played almost anywhere. This service is provided in an "on-demand" manner (Gopal & Kaushik, 2017). Although, at its core, the technology behind cloud-gaming is the same between providers each company offers some differentiation features to their customer. While some differentiate themselves through unexpected service, others provide fully customizable cloud-computers that are optimized for gaming. The following two providers, namely Google and BLADE SAS, offer cloud-gaming-service that follow a different approach. An overview on their differentiation strategy and business model will support the understanding on this matter. It is to be mentioned that most of the information in the following two paragraphs is retrieved from the services website.

2.2.1 Google – "Stadia"

Google's cloud-gaming-service "Stadia" was launched in November 2019 and is available on multiple platforms including web browsers, TVs, and smartphones. Google Stadia offers two tiers to its customers which differentiate themselves by screen resolution and assortment of available games. The assortment of games Stadia provides to its customers is partially free, yet players will need to purchase newly released 'AAA'-games (or triple-A) within the services own store. 'AAA' games are those with the highest budgets and largest production teams (Daniels, 2015). Due to its similarities the overall experience with Stadia can be compared to consoles. Upon subscribing to the service players will receive access to a unique platform with

comparable UX-design. Moreover, every player has his/her own library where games can be downloaded from the store and accessed at any time. However, Stadia's library does not cover the entire market which eventually appals users. This can be led back to the fact that developers must make their products (games) compatible to each platform. As Stadia is a unique and, compared to PlayStation, rather small platform, developers commonly hesitate to invest time and resources.

The free version which allows you to play games in a standard 1080p resolution. If players seek popular games, like 'AAA' games, they will need to purchase those through Stadia's store. The prices of those games are the same as consumers would find them in stores or other platforms. Nevertheless, consumers do not need to pay any subscription fees whatsoever.

Dedicated players can subscribe to the "pro" version of Stadia for 9,99€ / month. Consumers which decide for the paid version of Stadia will be able to enjoy a 4K-resolution gaming. Gamers will receive free access to games in a monthly rotation, including smaller games but also 'AAA' games. Additionally, paid users frequently receive large discounts on a broad selection of games. Nonetheless, a first-day discount for popular games is not granted instead prices remain like brick-and-mortar stores.

Unique to Stadia is its YouTube integration. The "State Share" feature allows gamers to launch a supported game from a save state shared by another players. In other words, while users watch others play their favourite game on YouTube, they can jump into the game immediately and challenge the same mission. With that Stadia strongly encourages social interaction and a community experience amongst.

Eventually the scope of service, i.e., free access to games, provided by cloud-gaming-services like Stadia can be revealed as driver towards consumers' willingness to use the service.

2.2.2 BLADE SAS – "Shadow"

Although considered as a cloud-gaming-service "Shadow cloud-gaming" is different from many other solutions on the market. Shadow allows users to rent out their own gaming setup, keeping mind it does not necessarily have to be used for gaming solely. In other words, the service is 100% customizable by its users as there are no boundaries or other limitations forced onto the customer. This includes external devices like controllers, keyboards and all other sorts of devices, everything can be connected to the system if customers wish to do so. "There is a constantly increasing supply of technology that facilitates customization" (Franke, Keinz & Steger, 2009). Generally, the demand for customizable products has increased as consumers preferences become progressively more heterogeneous (Gilmore & Pine, 1997). By subscribing

to the service, customers gain access to a “blank” high-end PC whose data can be streamed to any device. In the past 15 years the price of consoles has increased by more than 100% (gfu, 2021). Shadow offers its users a consistent and more affordable solution that makes other devices obsolete.

The high-end hardware offered by Shadow can easily be compared to what gamers would consider “high-end gaming PC”. This not only includes the implemented hardware but also the ethernet connection the system uses. In Germany only about 12% share an internet connection of up to 999 Mbit/s, while Shadow provides everyone by default access to 800 Mbit/s (ANGA, 2021). Additionally, customers do not have to pay extra to stream in 4K resolution, instead Shadow will automatically stream in the highest possible resolution depending on the display at hand. Another benefit customer receive with shadow are automatic updates, this does not only include system updates but also hardware updates that matches the selected package booked.

Currently, there are three packages of Shadow available for the market. Starting at 11,99€ / month and reaching all the way up to 39,99€ / month players have access to pre-designed systems with increasing capacities and computing power. The main concern of critics is the low base storage of 256GB which, depending on the intention of use, can be a boundary (Plante, 2021).

While users receive the maximum amount of freedom and customization possible, there is no game library that is like consoles or Google Stadia, thus there are discounts or other benefits either. As a result, players would need to purchase software or games online and download them onto their Shadow-PC. Nowadays, this does not occur as a problem as almost every software or game can be downloaded and activated from the internet. During the time this study was conducted, Shadow experienced a boom which caused users to only being able to pre-order the service. Eventually the highly customizable approach can be revealed as a driver for gamers to use the service.

2.3 Today's Gaming Industry

The gaming industry experienced an intense growth over the past three years, in fact it is currently counting 2,7bn players worldwide. Reports expect another boost of approximately 400mio by the end of 2023. The same report provides information on a demographic change, here 60% of the new players appear to be female and almost 30% are under the age of 25 years (Accenture, 2021). In terms of revenue generation, statistics show that Asia and Pacific market generates around $71,4bn from global game revenues which is equal to 52% of the total global

revenue. In comparison, Europe accounts for 21% of revenue which is equal to $28,7bn (Newzoo, 2018). One must keep in mind that this revenue is only derived from video games solely, while further revenue is added by complementary goods and services (Bonardi, Durand, 2003). The provided data shows that in fact, there is not only a new generation of gamers entering the industry, but also that the industry itself inherits extreme financial potential. To further evaluate on the industry and its potential future via cloud-gaming one must understand its history and trends in the market. This information will assist in assessing the underlying research questions around the success factors of the cloud-gaming business model.

2.3.1 Gaming as a Social Community

Since the first game appeared in the 1970s, video games have come a long way. Gaming industries are growing rapidly, so do the expectations of consumers, which makes it more complicated for developers to achieve user satisfaction and good interactions (Persada, 2019). The extent to which today's video games provide realistic graphics and simulated reality is surprising in many cases. Depending on the platforms, video games can be subdivided into computer games and console games. However, in recent years, the emergence of social networks, smartphones and tablets has introduced new categories such as mobile and social games. By now, video games exist not just as entertainment products but powerful tools of social integration (Kaye & Bryce, 2012). Business models evolve with time, sometimes due to changes in the market and sometimes due to advent of technology, resulting in emergence of exciting new trends. Therefore, it is only reasonable that the gaming industry and its underlying platforms evolve over time and change in growth, usage and consequently revenue.

New studies have shown that compared to last year, the only gaming platforms that experienced an increase in revenue are for mobile and tablet. Despite the hype for recently released consoles, PlayStation 5 and Xbox Series X, the market shrunk by a significant -8.9%. In comparison, the PC segment only decreased by -2,8% whereas the mobile market increased by 4,4%. The study provides yet another indicator for a meaningful change in the industry, its users and overall perception of “gaming”. Here, cloud-gaming with its “play anywhere” approach appears to arrive just in time to complement and leverage on the shifting market (Newzoo, 2021). More evidence for an increased interest and acceptance in mobile and tablet gaming is given by the latest revenue generated. Within the last five years (2016-2020) revenue from gaming apps in Germany has grown from €392mio to €2,264mio, which is equal to an immense increase of 477%. Surely, it is only reasonable that the sector is optimistic on the markets growth (Mulyawan & Rafdinal, 2021). A possible reasoning behind this phenomenon might be

the importance of "social-gaming". As Frankenberg mentioned "…their common interest in things gives them a common interest in each other" (Frankenberg, 1966). Vice versa, this approach can be transferred to gaming as well, since players rarely play alone, and the option of social interactions are already imbedded into many games and underlying devices. In other words, their interest in each other benefits the interest in the device at use. Players benefits and values the social interactions, group interactions that are happening in-game. For example, interactions, group interactions, game goods trading, and so on. Here, players can earn game money and trade game goods with other players, which can be downloaded for a small purchase fee in the game market (Kim, Yoo & Kaufmann, 2013). In Germany, more than 60% of men and more than 70% of women are interested in social interactions amongst each other (ifD Allensbach, 2020).

One can conclude, that although the gaming industry is thriving there is a shift between the platforms. This can mainly be argued by the changing types of gamers and their different approach towards gaming. The advantage of cloud-gaming being able to offer a "play anywhere" approach, can be a meaningful advantage for the service providers. The internet caused that the consumption of entertainment no longer is passive but an exchanging community (Heron, 2016). Researchers have already revealed that "online communities" represent new forms of organizing (Fulk & DeSanctis, 1995). Those types of online communities are commonly regarded as social spaces, but they furthermore have an impact on product development and knowledge creation for their creators (Holmstrom & Henfridsson, 2006). Cloud-services are capable to assist on connecting people, thus one might suspect that it would be beneficial to not only access any game anywhere, but also share those experience with peers and communities in one way or another like Google Stadia's YouTube integration. As already mentioned above, cloud-services leverage on their worldwide accessibility which eventually can be used to improve communication across all devices globally. As a driver, options of social interaction between players can be an advantage for the new service and capture consumers attention and raise interest.

3 Methodology

3.1 Detailed Questions and Hypothesis on Drivers that Facilitate the Usage of Cloud-Gaming-Services

After defining the study's research gap, detailed questions and hypothesis are formulated with the emphasis of revealing valuable insights. By seeking out potential success factors for providers of cloud-gaming services the research questions aim to resolve what drivers facilitate the usage of cloud-gaming-services and which hinder it.

Based on the previous literature it is predicted that the dependency on latency will hinder gamers from using the service. Moreover, services that exceed consumers expectations eventually pull gamers towards the innovative service. Additionally, the aspect of customization of digital services can be predicted to positively effect consumers' willingness to utilize cloud-gaming. As the importance of social communities in the gaming industry is rising, another prediction can be made, namely by facilitating interactions between users and gaming related content in any way eventually fosters the likelihood of using cloud-gaming-services. Lastly, the fact of not "owning" a physical gaming device, but instead fully relying on a digital cloud-service, can be perceived as insufficient or unsatisfactory for gamers and thus hinder their willingness to try cloud-gaming-services. Therefore, the following hypothesis can be formulated:

H1: Providing service that goes beyond the consumers expectations will increase their willingness to use cloud-gaming-services.

H2: Offering customization to consumers increases their likelihood to use cloud-gaming-services.

H3: Enabling consumers to interact with gaming-related content in any form is positively correlated to their willingness to use cloud-gaming-services.

H4: Latency issues will reduce consumers' willingness to utilize cloud-gaming-services.

H5: Consumers are less willing to use cloud-gaming-services because they are mainly digital products.

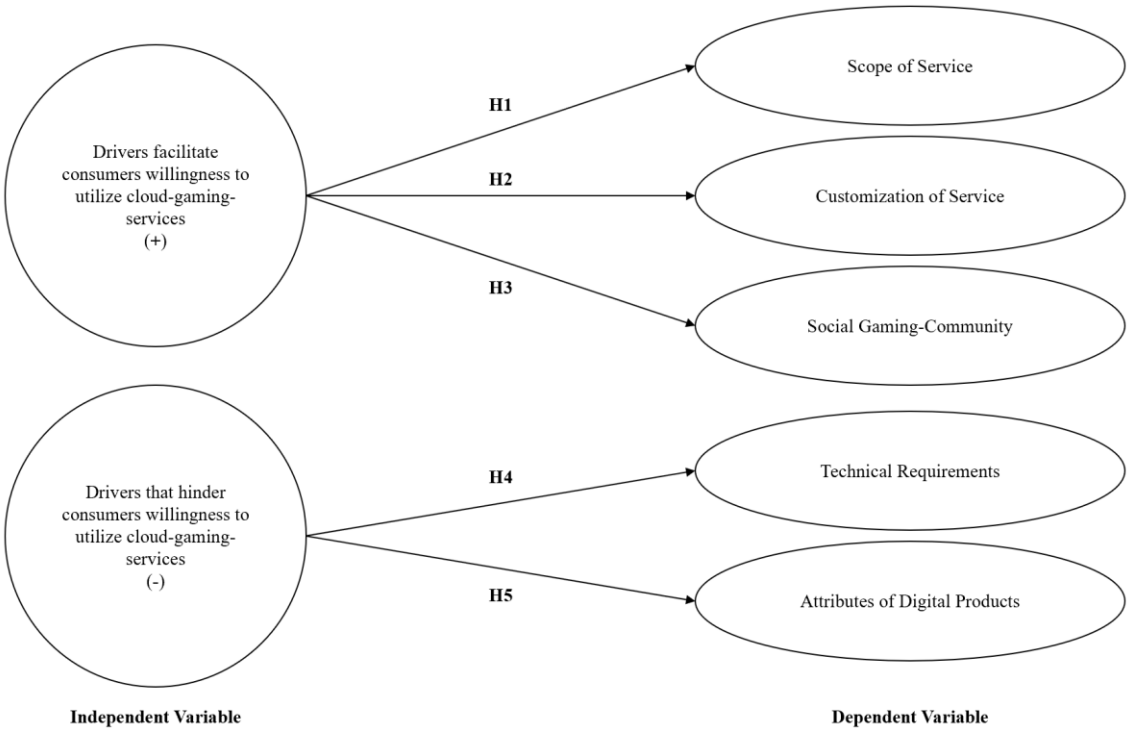

Figure 2 Conceptual Model of Consumers' Willingness to (not) Utilize Cloud-Gaming-Services.

Figure 2 portrays the relationship between dependent and independent variable and their relation towards the mentioned hypothesis of this study.

To properly assess all hypothesis mentioned above a qualitative and quantitative research method in form of interviews and a web-based survey will be applied.

3.2 Selection and Justification of the Qualitative & Quantitative Empirical Methodology

The theoretical background and the literature review provided an overview of the current state of research on possible influencing factors that promote consumers' willingness to use cloud gaming services. Empirical data was collected for this purpose. Several methods were available for data collection. The first decision concerned the general research design, namely the collection of qualitative or quantitative data. After defining the research gap of the underlying study, detailed questions and hypotheses were formulated. The aim of the study is to analyse which factors promote consumers' willingness to use cloud gaming services.

The data collected with a qualitative research method such as interviews has a low degree of standardisation. It is primarily a rather open method of data collection. The interviewee can express his or her opinion more freely by talking about re-perspective experiences. This allows the interviewee to address and emphasise certain parts of the topic, resulting in a broad survey (Hopf, 2007). For this study, interviews will provide a foundation for the following quantitative

research. In other words, the interviews can assist in revealing unknown issues or opportunities for the service providers that have not been mentioned in this study but can be evaluated through further research in form of a survey. If the respondent could talk about other topics, the answers may differ from the original topic and not contribute to answering the research question. Therefore, the underlying questions and topic must be specified and communicated clearly with the interviewee. Interviewees are expected to feel less pressured during the interview as the topic of cloud-gaming has barely any social responsibilities that eventually influence answers, thus making interviews a suitable research method for this study. To receive meaningful and comparable results, it is suggested to not only interview former or existing users of the service, but also those gamers who had no experiences with the service.

Quantitative data collection using standardised questionnaires is usually aimed at many people and is widely used in the field of behavioural research. To collect quantitative data in an orderly manner, the questions and possible answers are largely standardised (Reinecke, 2014). This method is known for its accuracy and effectiveness of results due to a more precise numerical analysis and a rather low error rate. However, quantitative methods can only be applied if a broad range of knowledge on the topic is already available. Without models and other knowledge, such standardised questions with scales cannot be formulated (Diekmann, 2006).

After examining and evaluating the two alternatives mentioned above, the decision was made to use both, a web-based survey, and an interview to collect quantitative and qualitative data. The advantage of revealing valuable information with the help of interviews and further assessing it via a web-based questionnaire appears highly suitable for this study. Due to its accessibility, the survey can reach most target groups easily (Ilieva, Baron, & Healey, 2002).

Consequently, both forms of data collection are appropriate methods for this study. Via the interview, opinions can be collected, and eventually unknown drivers revealed. The web-based survey allows to gather large amount of data from a great number of people in a short time.

3.2.1 Sample Description and Design of the Interview

The research design “is the logical sequence that connects the empirical data to a study’s initial research questions and, ultimately, to its conclusion” (Yin, 2018, p. 26). With the help of interviews, explanations for the "how" and "why" of key events can be suggested and reflecting on the participants' perspective. For this study interviews are an essential part to provide evidence and reveal unknown factors.

For this study, purposeful sampling, also known as subjective, judgmental, or selective sampling, is selected as the most suitable approach (Yilmaz, 2013). A balanced sample, existing of

five (former) users of cloud-gaming-services and five non-user of cloud-gaming-service was selected for this study. By balancing the interviewees, it can by their “user types” it can be ensured that the results are unbiased and representative. To further validate the sample, gamers that share similar gaming behaviours, i.e., time spend on video games, have been selected.

With the emphasis of gathering sufficient information semi-structured interviews were developed. Firstly, an appropriate interview guide was designed, here the questions were kept as adaptive and flexible as possible to promote free discussions on the topic of cloud-gaming-services. By including mainly introduction questions, as well as follow-up and probing questions the design was strongly aligned with Kvale (1996, pp. 133-135). The underlying method empowers the interviewees to answer freely in a transparent and flexible way while ensuring a broad scope of responses (Longhurst, 2003). Paying thorough attention towards the flexibility of the interview an interview guide was created (Appendix A).

The data analysis is a quite complex and time-consuming activity which concentrates on narrowing wide-ranging statements into meaning units (Creswell, 2013). Therefore, all ten interviews were coded. For the interviews, the codes related to the observed expressions and emotions were divided into divided into positive and negative. The respective themes have developed from the context to which the codes refer and serve as a rationale for the participants' feelings that have arisen. In the process the positive and negative emotions perceived by the participants are explained and were analysed. As the interviews were hold in German, all answers were translated after identifying relevant codes. Appendix C displays an overview of positive and negative codes and their underlying themes. For further simplicity the respondents have been divided into two groups, where group A represents the five participants that are still/ were former users of cloud-gaming-services and group B which represents gamers that have not yet used cloud-gaming-services. This will help to make the evaluation easier and eventually reveal unknown information.

3.2.2 Sample Description and Design of the Web-Based-Survey

Since the target group of this questionnaire is basically everyone who plays video games, a standardised questionnaire seems to be an appropriate data collection method. Appendix B provides a detailed overview on the questions and answers of the underlying survey.

Most importantly, participants require access to the internet, and additionally, they need play video games on any possible devices. Due to the short time frame, only the German market is examined in this study. The final criterion for the selection of respondents is therefore that German is the is the mother tongue of the respective participant.

Respondents were contacted via gaming related social-media channels like “Discord”, “Reddit” and appropriate Facebook-groups but also by personal contact via a shared link. To collect data, Qualtrics.com was used and will further be used to evaluate and analyse the gathered information in a meaningful way. The survey included a lottery to further incentivise the participation in the survey.

The questions included into the questionnaire are kept to a reasonable amount since the risk of unfinished survey rises with the number of questions and therefore the participants time spend on it. Although, unfinished surveys would still yield results it would hurt the overall balance of results if put into comparison. Moreover, it is to be mentioned that the survey includes multiple types of questions apart from open questions since it is proven, that remembering information is more exhausting than identifying it, which is why, on average, participants tend to answer open type question more rarely (Klein & Porst, 2000). As the previous interview will already gather sufficient qualitative data, the survey will not rely on any type of open questions and thus consist of closed type questions with a 5-point Likert scale. By utilizing this type of questions, the pending analysis is simplified and frequencies as well as other descriptive statistics be enabled.

Another form of closed questions are multiple choice questions that are commonly developed with a known pre-set of answers. Although, the question type is convenient to participants its questions must be designed thoroughly. In detail, it is recommended that questions include a “I don’t know” type of answer, here “Neutral” was chosen. With that, respondents are not forced into a definite answer and feel less pressure during the process. Moreover, respondents will enter different branches of the survey depending on their answers to ensure a suitable and balanced questionnaire.

Lastly a question was included to ensure the participants attention. Here, the respondents are asked to select a required answer if he or she would select another option for the underlying data will not be used for evaluation. With that, the quality of research is guaranteed.

4 Results & Discussion

4.1 Findings – Interview Series

Through the course of the interviews no understanding issues occurred, nor did any participant feel pressured or unable to answer any of the questions. Instead, the approach of incentivising a discussion around the topic of cloud-gaming-service proofed as successful. The first five interviewees were active users or have been users of cloud-gaming-services (group A). Compared

to the other five interviewees, who have not yet used cloud-gaming-services (group B) the respondents differentiated in their gaming habits. In detail, former or active users not only tend to spend more time playing video games but are also more likely to utilize multiple devices to do so. It was unintentionally uncovered that these types of gamers prefer different devices for different types of games, i.e., for role-play-games (RPG) most preferred consoles. This eventually present another aspect for further research. As cloud gaming is known for its accessibility of games over various platforms, it could be suggested that gamers of any specific genre are equally attracted to the model of cloud-gaming-services.

Theme 1: Social Gaming-Community

Group A: Social interactions consumed by the gamers are mostly related to information and entertainment on video games. For them, interactions of any type are part of the community and not only keep them engaged but motivate them to further participate in the games and its discovery. Here, entertaining content is consumed mostly through streaming services like Twitch while informational content via YouTube and Forums like Discord. It was frequently mentioned that mainstream media like YouTube promotes lower quality content eventually even suggesting "fake news" amongst gamers. Moreover, the possibilities to interact with social media channels while gaming have been criticized as "not user-friendly", especially for consoles.

Group B: The results for these players were only barely different from each other. Although users consume the same type of content it was observed that the frequency of interactions was lower compared to the other group. However, the importance of general opportunities to interact was as high as for the other group.

Theme 2: Attributes of Cloud-Gaming

Group A: For these type of gamers cloud-gaming is rather an additional gaming option that is suitable for holidays and people that switch places frequently but not yet as a substitution for existing solutions. The main reasoning behind that perception is due to the services dependency on internet. Also, it was mentioned it was "weird and unsatisfying" to not physically own a gaming device but rather a software.

Group B: Although participants curiosity immediately rose upon explaining the concept of cloud-gaming there have been a few sceptical responses as well. Additionally, one respondent mentioned "sounds too good to be true". Compared to group A, the participants were positively stunned by the idea of not being required to own a physical gaming device.

Theme 3: Scope of Service

Group A: Services provided have overall been perceived as “refreshing” and “competitive” with further indications of potential services like access to Beta-Versions of video games. The participants agreed that service can make a significant difference and encourage people to use cloud-gaming. However, it was also mentioned that performance is valued over the scope of service, referring to cloud-gaming’s dependency on latency.

Group B: Respondents are frequently underwhelmed by the current service provided, yet mentioned their expectations, for a service that aims to become the future of gaming, were higher. Offering unexpected services makes cloud-gaming more attractive to them. Moreover, services from consoles were criticised for not being transparent and inflexible.

Theme 4: Customization of Service

Group A: Cloud-gaming users highly value the freedom customization generally offers to users but claim that current solutions are “not intuitive”, “can be confusing” and are perceived as “incomplete”. Nonetheless, it was mentioned that it evokes a feeling of ownership and could enable services to stand out and differentiate themselves from competitors in the market, which was highly valued.

Group B: The participants answers have been like the ones from group A. Moreover, it was mentioned that they were “annoyed” by features and apps that are installed automatically on their system and cannot be removed.

In total, the responses of both groups were aligned in their perception most of the time with only a few differences. Also, some general differences between the groups were found that mainly refer towards their attitude and habits of gaming. As previously mentioned, the interview revealed one potential additional driver for cloud-gaming-service’s success, another hypothesis was formed to be evaluated within the survey:

H6: Cloud-gaming-services attract gamers equally across all genres.

The design of the web-based-survey was adjusted accordingly upon forming the new hypothesis. Thereby, it was ensured, that the eventual driver is still considered for this study and not left to be evaluated another time.

4.1.1 Discussion of Interview Series

After summarizing the findings of the interview, the results must be put into relationship with the underlying hypothesis of this study.

The first hypothesis, namely *Providing service that goes beyond the consumers expectations will increase their willingness to use cloud-gaming-services* can be accepted. In detail, it was commonly mentioned throughout most interviews, that new types of services such as early-

access are perceived as competitive and refreshing. Nevertheless, users of cloud-gaming service clearly stated, that their top priority would lie in the performance of the service not its scope of additional offerings. This is hypothesis further supported by the fact that companies increasingly expand their strategies towards the customers' perceived experience through service (Lemon & Verhoef, 2016).

Concerning the impact of customization options, interviewees clearly stated their dissatisfaction. The feeling of physically owning an object attracts them, hence, it provides a feeling of possession to its users. Previous studies have shown that the possession of an object has a positive impact on its perception (Huang et al., 2009). Hereby, the second hypothesis can be confirmed as well.

It could be observed that especially active or former users of cloud-gaming-services have a more in-depth connection towards social-interactions while gaming. The hypothesis suggests that improved offerings of possible interactions facilitate the usage of cloud-gaming-services. As the form of interaction is more in-dept with former or active users, one can observe a positive correlation between the usage of cloud-gaming-services and the options of social-interactions, hence the third hypothesis can be accepted.

The negative relation between internet dependency, namely *Latency issues will reduce consumers' willingness to utilize cloud-gaming-services*, and the customers' willingness to utilize cloud-gaming-service can only party be confirmed with the results of the interview. Depending on the type of player and the underlying games, latency issues were not considered as a problem or reason not to utilize the service. However, this does only apply to a more "casual" types of players. Here, further evidence for clarification will be provided by the survey.

Lastly, the correlation between physical ownership and the consumers' willingness to utilize cloud-gaming-service was researched. Like the previous hypothesis, the last hypothesis can only be party accepted or rejected. In detail, active / former users of cloud-gaming commonly mentioned that not physically owning the service feels unsatisfactory and thus rather hinders them to utilize the service than to use it. However, group B clearly showed their appreciation for the concept and the newly gained freedom that comes with it. Thus, the fifth hypothesis, namely *Consumers are less willing to use cloud-gaming-services because they are mainly digital products,* can neither be rejected or accepted.

4.2 Findings – Web-based Survey

The survey carried out from 23rd of November to 1st of December 2021 resulted in 256 participants of whom 205 provided eligible complete questionnaires. Accordingly, there is an error

of 51 people who either stopped answering the survey, answered the control question wrong or did not play videogames.

$GamingDevice*Q24 Crosstabulation

			Was ist dein Geschlecht?				
			Weiblich	Männlich	Divers	Keine Angabe	Total
Devices used for Gaming[a]	PlayStation	Count	27	55	0	1	83
		% within $GamingDevice	32.5%	66.3%	0.0%	1.2%	
	XBox	Count	9	19	0	1	29
		% within $GamingDevice	31.0%	65.5%	0.0%	3.4%	
	Nintendo	Count	19	33	0	1	53
		% within $GamingDevice	35.8%	62.3%	0.0%	1.9%	
	Smartphone	Count	32	60	1	0	93
		% within $GamingDevice	34.4%	64.5%	1.1%	0.0%	
	Tablet	Count	11	6	0	0	17
		% within $GamingDevice	64.7%	35.3%	0.0%	0.0%	
	PC	Count	30	104	2	1	137
		% within $GamingDevice	21.9%	75.9%	1.5%	0.7%	
	Sonstige	Count	1	2	1	0	4
		% within $GamingDevice	25.0%	50.0%	25.0%	0.0%	
Total		Count	54	145	2	2	203

Table 1 Cross Table of Gaming Device and Gender

Table 1 illustrates the distribution of male and female gamers across different platforms. Although gaming is commonly associated with the male gender, more than ¼ of all participants were female. Here, the majority, namely 64%, play video games on their tablet, whereas more than 70% male gamers prefer a PC.

$DeviceInUse*Q25 Crosstabulation

			Wie alt bist du?						
			Unter 14	14-18	19-24	25-34	35-44	Über 44	Total
Device Used For Gaming[a]	PlayStation	Count	0	4	15	45	16	3	83
	XBox	Count	0	2	8	12	7	0	29
	Nintendo	Count	0	2	9	28	12	2	53
	Tablet	Count	0	2	3	9	2	1	17
	Smartphone	Count	0	5	20	49	15	4	93
	PC	Count	1	4	36	70	24	2	137
	Sonstige	Count	0	0	3	1	0	0	4
Total		Count	1	8	51	101	36	6	203

Table 2 Gaming Device in Use by Age

Table 2 displays the distribution of age across the underlying platforms. Evidently, the “older” (35-44) players prefer PC over all other devices, whereas gamers between 25-34 use their smartphone more often for gaming than a PlayStation. Nonetheless, the table shows that among the three most frequent age groups a PC is the most use device for gaming.

Descriptive Statistics

	N	Mean	Std. Deviation
PlayStation	85	4.12	.905
XBox	29	3.86	.990
Nintendo	54	3.98	.942
Smartphone	93	3.49	1.039
Tablet	17	3.65	.931
PC	138	4.37	.897
Valid N (listwise)	0		

Table 3 Satisfaction with Gaming Device

Table 3 proves that gamers are most satisfied with a PC followed by PlayStation. Although all means indicate that players are at least “rather satisfied” with their solutions smartphone gamers are the least satisfied. Here, the mean of 3,49 is accompanied by a comparably high std. deviation of > 1. This indicates that the perception on satisfaction differs largely among the participants.

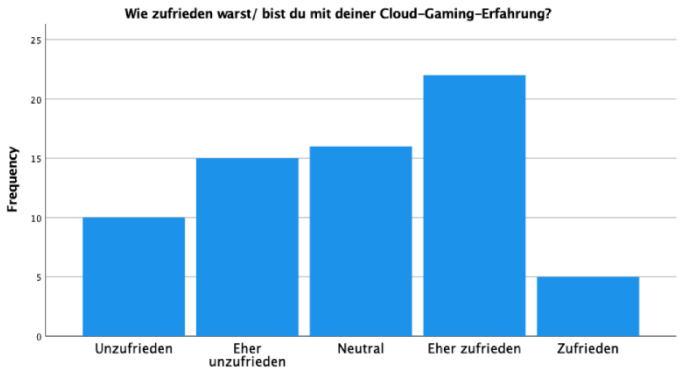

Figure 3 Satisfaction with Cloud-Gaming-Services

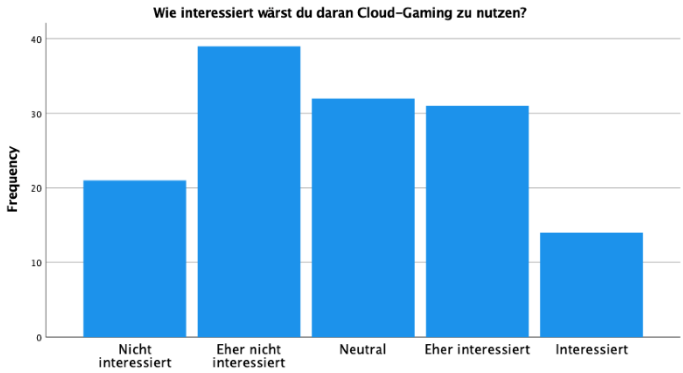

Figure 4 Interest in Cloud-Gaming-Services

The bar chart in figure 3 displays the satisfaction of all former or current users of cloud-gaming-services (33% of the participants). Additionally, an ANCOVA with multiple covariates was conducted. It revealed that control variables such as ownership and age indeed influence the dependent variable, here being interest in cloud-gaming-service while the hours spend are considered as statistically insignificant (Appendix E). It can be observed that the satisfaction differs largely amongst the respondents that utilize the service. In detail, there are 27 participants that are either “satisfied” or “rather satisfied” with the solution. Simultaneously, there are 25 users that were / are either “unsatisfied” or “rather unsatisfied” with the solution. Similar results can be seen in figure 4 which features unbiased gamers interest in using the service. In fact, 33% of the users lag interest and only 23% show interest in the innovative service.

Welcher Service würde dich am ehesten dazu bewegen Cloud-Gaming-Service zu nutzen?

	N	%
Kurze Kündigungsfristen	8	3.9%
Regelmäßige Rabattaktionen	5	2.4%
Kostenfreie Upgrades (Speicherplatz, RAM etc.)	28	13.7%
Treueboni (Coupons oä.)	6	2.9%
Referal-Boni durch Anwerben von Freunden	1	0.5%
Zugriff auf Plattform-exklusive Spieltitel (Halo - Xbox)	20	9.8%
Umfangreiche Spiel-Bibliothek	11	5.4%
Kostenfreie Blockbuster-Spiele	31	15.1%
Kostenfreie Nicht-Blockbuster-Spiele	5	2.4%
Early Access zu Spielen	12	5.9%
Missing System	78	38.0%

Table 4 Services that Increase the Willingness to Use Cloud-Gaming

Previously, six hypotheses have been formulated. Hypothesis one stated that the willingness to use cloud-gaming-services will increase upon exceeding consumers expectation on service provided. For this purpose, Q22 and Q23 were formulated. 38% of all participants perceived none of the displayed services as “exceeding”. Among the services that exceed their expectations (table 4) free upgrades and free access to AAA-games appear as the most appealing.

Correlations

		Wie interessiert wärst du daran Cloud-Gaming zu nutzen?	Wie wichtig ist es für dich deinen Cloud-Gaming-Service individuell an deine Anforderungen anpassen zu können?
Wie interessiert wärst du daran Cloud-Gaming zu nutzen?	Pearson Correlation	1	.192*
	Sig. (2-tailed)		.026
	N	137	136
Wie wichtig ist es für dich deinen Cloud-Gaming-Service individuell an deine Anforderungen anpassen zu können?	Pearson Correlation	.192*	1
	Sig. (2-tailed)	.026	
	N	136	204

Table 5 Correlation Between Interest and Customization

Wie wichtig ist es für dich deinen Cloud-Gaming-Service individuell an deine Anforderungen anpassen zu können?

	N	%
Unwichtig	13	6.3%
Eher unwichtig	10	4.9%
Neutral	37	18.0%
Eher wichtig	76	37.1%
Wichtig	68	33.2%
Missing System	1	0.5%

Table 6 Importance of Customization

The second hypothesis covered the user's ability to customize the service and its positive influence on their willingness to use the service. Table 5 discloses on the correlation between customization and the interest in cloud-gaming-service. With a significance level below 0.05 this statistic provides an educated guess in favour of the hypothesis can be made. A slightly positive correlation was measured. The general importance of customization is clearly demonstrated by the results of Q19 (table 6) where more than 70% considered this attribute as at least “rather important”. Cloud-gaming users were further exposed to valuing customization more than other gamers. Moreover, the option of customization was found as significant influence on the general interest in CGS (Appendix E).

Statistics

		Wie oft spielst du gemeinsam mit anderen?	Wie oft konsumierst du Gaming-basierte Inhalte? (YouTube, Foren etc.)	Wie oft interagierst du mit Gaming-basierten Inhalten? (liken, kommentieren etc.)	Wie oft teilst du Gaming-basierte Inhalte mit anderen?	Wie oft erstellst du Gaming-basierten Inhalte? (Beiträge, Video, Anleitung etc.)
N	Valid	205	205	205	205	205
	Missing	0	0	0	0	0
Mean		3.70	3.64	2.91	2.46	1.69
Std. Deviation		.855	.906	.930	1.007	.949

Table 7 How Gamers Interact with Gaming Related Content

Statistics

		... die es dir erlauben gemeinsam mit anderen zu spielen?	... Gaming-basierte Inhalte zu konsumieren?	... mit Gaming-basierten Inhalten zu interagieren?	... deine Gaming-basierten Inhalte zu teilen?	... Gaming-basierten Inhalte zu erstellen? (Beiträge, Video, Anleitung etc.)
N	Valid	205	205	205	205	205
	Missing	0	0	0	0	0
Mean		4.10	4.07	3.85	3.60	3.40
Std. Deviation		.880	.826	.892	.952	1.012

Table 8 Satisfaction with Ability to Interact

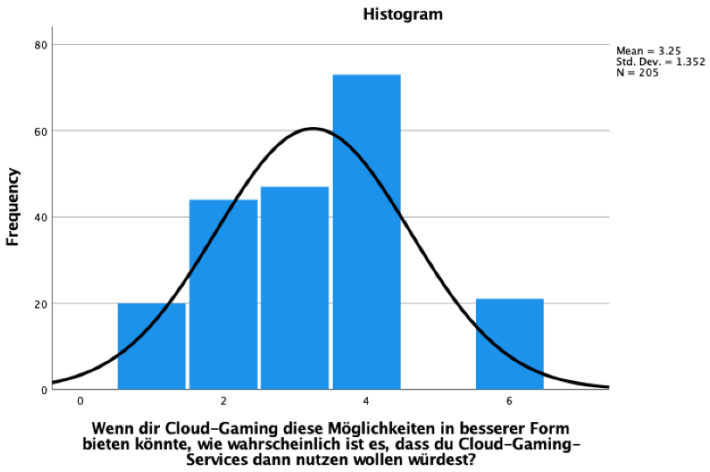

Figure 5 Histogram of Likelihood to Use Cloud-Gaming Upon Enhancing Interaction Options

To reveal participants perception on social interactions while gaming Q16 and Q17 were formulated. Gamers show a clear general interest in their games in their leisure time as shown by table 7. A clear pattern of a decreasing mean can be observed starting high at 3.70 at the "easiest" way of interaction until reaching its lowest point of 1.69 at the "hardest" way of interaction. Similar pattern can also be observed for users' satisfaction and their ability to interact in the underlying ways. As shown by table 8, the satisfaction is generally high ranging from 4.10 to 3.40 at its lowest point. The mean of 3.25 in figure 5 further shows that although users' satisfaction they would still be more interested into cloud-gaming if enhanced options would exist. Among the demographics age appears as a significant covariate on the interest in cloud-gaming. The linear regression model further proves, that the interest is higher among younger gamers (Appendix E).

Group Statistics

	Hast du Cloud-Gaming bereits genutzt?	N	Mean	Std. Deviation	Std. Error Mean
Inwiefern trifft das folgende Statement auf dich zu? - "Lags würden/ halten mich davon ab Cloud-Gaming zu nutzen"	Ja	68	3.81	1.213	.147
	Nein	137	3.88	1.112	.095

Table 9 T-Test: Impact of Latency on Willingness to Use Cloud-Gaming

Correlations

		Wie zufrieden warst/ bist du mit deiner Cloud-Gaming-Erfahrung?	Inwiefern hat das "Lag" dein Spielerlebnis beeinflusst?
Wie zufrieden warst/ bist du mit deiner Cloud-Gaming-Erfahrung?	Pearson Correlation	1	.271*
	Sig. (2-tailed)		.033
	N	68	62
Inwiefern hat das "Lag" dein Spielerlebnis beeinflusst?	Pearson Correlation	.271*	1
	Sig. (2-tailed)	.033	
	N	62	187

Table 10 Correlation Between Satisfaction and Lag

Latency issues were defined as a negative influence towards the usage of cloud-gaming. To further elaborate on this hypothesis Q15 was designed. The rather high mean value of the T-test (table 7) indicates a negative effect of latency issues on consumers' willingness. In fact, this effect applies for both groups, namely active / former users but also unbiased gamers. Moreover, table 8 proves the correlation between lag and satisfaction of cloud-gaming is indeed significant ($p<0.05$). Here, a positive correlation was revealed. Analysing covariates and control variables it was revealed that the perception on lags is not influenced by being a user of cloud-gaming-services or not (Appendix E). However, the number of people who have experienced lags is higher for former or active cloud-gaming-service users according to their mean (Appendix E).

Correlations

		Wie zufrieden warst/ bist du mit deiner Cloud-Gaming-Erfahrung?	Wie wichtig ist es dir, das Gerät physisch zu besitzen?
Wie zufrieden warst/ bist du mit deiner Cloud-Gaming-Erfahrung?	Pearson Correlation	1	-.335**
	Sig. (2-tailed)		.005
	N	68	68
Wie wichtig ist es dir, das Gerät physisch zu besitzen?	Pearson Correlation	-.335**	1
	Sig. (2-tailed)	.005	
	N	68	205

Table 11 Correlation Between Satisfaction an Ownership

Group Statistics

	Hast du Cloud-Gaming bereits genutzt?	N	Mean	Std. Deviation	Std. Error Mean
Wie wichtig ist es dir, das Gerät physisch zu besitzen?	Ja	68	3.84	1.167	.141
	Nein	137	3.90	1.152	.098

Table 12 T-Test: Importance of Ownership to Type of Gamer

Additionally, it was found that there is a significant ($p<0.01$) correlation between the ownership of a physical device and the satisfaction of cloud-gaming-services as shown in table 11. In detail, users are less likely to be satisfied form cloud-gaming-services by the factor of -0.335 due to not owning a physical device. The T-test reveals that former / active cloud-gaming users are almost equally primed on owning a physical gaming device. Here the statistical difference is 0.06 for the respective means. Ownership further appears as the most significant covariate that influences the interest in cloud-gaming (Appendix E). The Linear Regressions reveals that gamers are less likely to be interested in CGS by the factor of –0.540. Although not being a high number it displays the correlation between ownership and CGS.

$GamingGenre*Q12 Crosstabulation

			Wie interessiert wärst du daran Cloud-Gaming zu nutzen?					
			Nicht interessiert	Eher nicht interessiert	Neutral	Eher interessiert	Interessiert	Total
Most Played Genres[a]	Strategie (z.B. League of Legends, Starcraft)	Count	4	13	9	11	10	47
	Action (z.B. Fortnite, Assessins Creed)	Count	5	10	14	8	5	42
	Rollenspiele (z.B. The Witcher, World of Warcraft)	Count	10	18	16	14	5	63
	Shooter (z.B. Call of Duty, Counter-Strike)	Count	11	18	13	11	4	57
	Simulator (z.B. Flugsimulator, World of Tanks)	Count	5	3	4	4	3	19
	Abenteuer & Geschicklichkeit (z.B. Legend of Zelda, Hearthstone, Animal Crossing)	Count	7	16	15	12	6	56
	Sport & Rennspiele (z.B. Fifa, Forza)	Count	6	7	6	4	4	27
	Gelegenheit (z.B. Candy Crush, Nintendogs)	Count	3	7	6	6	4	26
	Sonstige	Count	3	2	1	2	0	8
Total		Count	21	39	32	31	14	137

Table 13 Interest in Cloud-Gaming by Gaming Genre

Welche der folgenden Spielgenres hast du im letzten Monat am meisten gespielt? (mehrere Antwortmöglichkeiten) – Selected Choice Shooter (z.B. Call of Duty, Counter-Strike) * Inwiefern trifft das folgende Statement auf dich zu? – "Lags würden/ halten mich davon ab Cloud-Gaming zu nutzen" Crosstabulatio

Count

		Inwiefern trifft das folgende Statement auf dich zu? – "Lags würden/ halten mich davon ab Cloud-Gaming zu nutzen"					
		Trifft nicht zu	Trifft eher nicht zu	Neutral	Trifft eher zu	Trifft zu	Total
Welche der folgenden Spielgenres hast du im letzten Monat am meisten gespielt? (mehrere Antwortmöglichkeiten) – Selected Choice Shooter (z.B. Call of Duty, Counter-Strike	Shooter (z.B. Call of Duty, Counter-Strike)	6	4	16	27	38	91
Total		6	4	16	27	38	91

Table 14 Shooter Genre Interest in Cloud-Gaming Despite Lags

Subsequently to the qualitative research Q12 was formulated to research the attraction towards cloud-gaming-services depending on gaming genres at hand. Table 13 displays that especially for FPS related gaming genres the like Shooter and Roleplay gamers are hindered to utilize cloud-gaming-services. On the other side, gamers of the Strategy and Adventure genre appear to be more interested in the service. Table 14 eventually provides a connection between the missing interest in cloud-gaming and lag as the majority of FPS gamers is hindered to use cloud-gaming due to lags.

4.2.1 Discussion of Web-based Survey

The results of the questionnaire provide sufficient information to make educated statements on the underlying hypothesis of this study.

As 62% of the participants stated that mentioned services exceed their expectations and further evaluated which of those services would increase their willingness to utilize the service, the first hypothesis can be accepted. Google Stadia covers many of the favoured features the

business model and can eventually be considered as a great example for cloud-gaming-service. In fact, the most valuable service, namely free access to AAA-games, is commonly covered by Google Stadia. Here, the service cooperates closely with the well beknown game-developer Ubisoft who is responsible for releasing blockbuster-games on a yearly basis.

Further, findings have shown that a customizable service offer strongly benefits consumers acceptance and appreciation towards cloud-gaming. As previously presented, more than 70% considered their “freedom” within a service as at least “rather important” and a positive correlation was further uncovered. As Gilmore & Pine uncovered in their previous study, there is an increasing interest in customizable services and offers. Eventually, Shadow-cloud-gaming approach of offering a 100% customizable experience is yet another valuable example for the innovative product. Hypothesis two can therefore, too, be accepted.

Gamers social attitude in form of their interaction with gaming related content was researched and embedded in the third hypothesis. Although the overall satisfaction in the offered ways of interaction was high, the majority stated an increased interest in cloud-gaming upon advanced offerings. The previously histogram provides evidence to accept the third hypothesis of the thesis. The results confirm Frankenberg's claim, that user's interest in each other increases their interest in the common thing.

The fourth hypothesis assumed a negative impact of lag towards gamers willingness to utilize cloud-gaming-services. Lee et. al., already stated that there is a strong dependency of cloud-gaming from latency, the data revealed proves that evidently. Not only former / active users of cloud-gaming-services but also unbiased gamers are almost equally hindered by lag. Eventually latency can be considered as the bottleneck of the entire business model as it represents the very foundation of “cloud services” in general.

Another characteristic of cloud-gaming, that was formed as the fifth hypothesis, is referring to the physical ownership of a device. Morewedge and Atasoy mentioned customers do not feel the same type of ownership for digital goods as for physical goods which leads them to inflate their value. In this study similar means were detected along with a strong need for physical ownership of the device at hand as shown by the correlation. With that, the fifth hypothesis of this thesis can be confirmed.

Lastly, the attraction of the innovative service towards gamers across genres was measured. Despite cloud-gaming-services key selling argument, mainly being able to play anything anywhere at any time, the argument appears less effective towards players of FPS related gaming

genres like Shooters. Eventually, this can be explained by the dependency of lag and its potential influence on fluent and smooth gameplay. Therefore, the last hypothesis must be rejected as not all genres are equally attracted by cloud-gaming-services.

5 Conclusion

5.1 Limitations and Implications for Future Research

For this study a survey was used for quantitative research and interviews have been conducted as part of the qualitative research. The purpose of the questionnaire is to identify eligible respondents to answer to the research gap, what success factors facilitate the usage of cloud-gaming-services. Both research methods were designed to further reveal specific drivers that would either facilitate or hinder consumers' willingness to utilize cloud-gaming-services. Consequently, the data collected should rely on respondents that fit into a target group capable of providing information for the research. The questionnaire did not address all the objectives of the research study but should be limited to the minimum number of questions required to establish eligibility as other objectives were research via qualitative interviews.

Given the limited timeframe the study could only approach the topic to a certain extent and depth. Furthermore, the survey covered 205 total responses which can only hardly be compared to the overall satisfaction and opinion of customers on discounters. Further, due to the short time frame, the convenience sampling method was chosen. This may lead to the results being bias and thus prevents generalization (Etikan et al., 2016). Moreover, the sample of the study was only randomized to a certain extent, since the link to the survey was forwarded intentionally and consciously to others. However, the attempt was made to create a sample that offers different groups of ages, gaming-platforms, and behaviour. Surely, it cannot be guaranteed that the questionnaire was answered equally by all different types of gamers. For the interviews, this issue was avoided as the participants have been chosen intentionally to provide a balanced sample. In terms of sample size, ten interviews were conducted due to saturation of the results has occurred. Nevertheless, due to the limited number of interviewees, the validity and significance of the results are limited, in terms of their transferability to a general basis.

Since the study solely is based upon the perceptions of German gamers, it can be argued that due to demographical and psychographic differences the answers eventually differ from the results that could have been gathered in a different country. Here, many different factors could influence the outcome of the study i.e., income, availability of fibre optic internet or legal restrictions by the government.

Cloud-gaming-services were only recently considered to be market relevant innovations, thus, the access of literature on the underlying topics and aspects of the business model is very limited. If there was more available knowledge on the topic, the research gap eventually differed.

5.2 Managerial Relevance

The last part of this study will interpret the previous findings and results from a managerial perspective. For managers of cloud-gaming-services it is vital to understand which drivers attract gamers towards their service and which drivers hinders them from using it. After all, the very success of a company and its underlying service is depending on implementing relevant success factors into the offered service. This becomes even more relevant when considering the results of this study. Cloud-gaming-services are yet in their development and many gamers are unaware of the service as the statement “sounds too good to be true” from the interview series has proven. During the pandemic multiple enterprises in the gaming industry started to release their own interpretations and versions of cloud-gaming-services. This being one can suspect the potential those companies see in the business-model and the technology.

This study has proven that the biggest concern that hinders gamers from utilizing the service is related to the technological background of it. In detail, lag and its negative perceived influence on the gaming experience appears as the main driver not to utilize the service. Here, managers should consider that this applies especially for players of heavily FPS related gaming genres like Shooter. By adjusting offerings in the gaming library and repositioning within the market, service providers eventually attract gamers of a gaming genre that is less dependent on FPS and is more likely to utilize the service, i.e., Strategy or Roleplay (RPG).

Physical ownership of a product appears to be another important aspect for gamers. However, since the importance of it was almost equal between former / active service users and non-users the offering of peripherals like controllers must not be considered as success factor for service-providers. In fact, interviewer participants have frequently mentioned that cloud-gaming services appear as a suitable holiday solution or for players that are frequently moving. That being, it is reasonable why 80% of all participants of the survey perceived “flexible conditions” as a must have for the service (Appendix E). Focusing on providing the right service conditions eventually yields more success than offering alternative physical devices to customers.

Nonetheless, players feal attracted by the idea of receiving free access to AAA-games among other services that exceed their expectations. From a managerial point of view, providing such service is often related to legal issues in form of copyrights or other, it can therefore be difficult

to offer such services to the gaming community. Here, Google Stadia and Ubisoft act as a good example on how cooperation's between cloud-gaming companies and game developers can facilitate the willingness to utilize the service. Seeking out cooperation's within the industry can be a catalyst for service-providers and game developers at the same time.

Managers eventually face other legal concern when enabling a fully customizable service to their customers. Gamers highly value all aspects customization, ranging from general design to detailed user profiles. Especially, the ability to create their own library with already owned games appears as important (Appendix E). This displays yet another opportunity for service provider to differentiate themselves from others in the industry.

Although users are already satisfied by gaming related social-interaction options many of them would be willing to utilize cloud-gaming-services if they offered more or advanced options of it. Managers of cloud-gaming-companies are therefore advised to further focus on the social aspect of gaming. With cloud-gaming, clearly gaming itself is the focus, the experience that comes with it is just as important. Eventually, for some gaming genres the ability to enjoy gaming is derived through those social aspects instead of performance aspects.

Concluding it can be said, that although cloud-gaming-services have already entered the market it is still in early development from the point of view of their customer's, namely gamers. The latest increase in offering of services is proof for the relevance of the business model and the competition within the market will further foster the development of the technology and offered services. It is recommended for managers to evaluate a clear targeting and positioning strategy for the market and develop service and performance that facilitate the target group in question. A unique service can also be acquired by engaging cooperation's not only with game developers but eventually social platforms like YouTube or alike. In the future cloud-gaming will eventually play a major role in the gaming industry as high-speed internet will become more accessible and technology reaches its next step through research and development.

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Appendix A – Interview Guide

Objective of the interview: What facilitates the usage of cloud-gaming-services

Hello XY,

Thank you for your time and taking part in this interview.

Before we start, I would like to let you know that, although I have prepared various questions, you may speak freely and are welcomed to discuss the topic to your liking. This interviews aim is to understand your personal perception, thus revealing your opinion is very valuable.

All data will be treated confidentially and evaluated anonymously. Are you ready to start?

I. Gaming habits in general

- **a.** How old where you when you started playing video games?
- **b.** How many hours per week do you spend on average on video games?
- **c.** On what devices do you play video games?
- **d.** Do you have a preferred device among those?
  - **i.** Why is that so, please elaborate?
- **e.** *If he/she uses more than one device* – What makes you use multiple devices?

Ok, now let us get into the first real topic. Let's talk communities, as a gamer it is almost impossible to avoid related content of any form.

II. Social Interactions while Gaming

- **a.** Have you ever done research on a game?
- **b.** *If he/she answers yes* – How did you do that, please give me an example.
  - **i.** Did it help you, please elaborate?
- **c.** Do you have a general interest to share your gaming experience in any way with friends?
- **d.** What is your position towards gaming-related-content in the internet, do you pay attention to it?

If the participants are unaware of, the concept of Cloud-Gaming-Services, it is explained to him / her

As you aware of the concept behind cloud-gaming I would like you to share you perception and impressions on it.

III. The Idea of Cloud-Gaming

- **a.** What do you think of the overall idea behind cloud gaming?
  - **i.** Is there anything you like or dislike in particular?
- **b.** Do you think there are boundaries to the service, if so, which?
- **c.** Are those boundaries reason enough not to use the service?
- **d.** If cloud-gaming would keep its promises, would you use it and do you think it could become the future of gaming?
- **e.** *If he/she answers yes* – Would you use it additionally or as an alternative?

Depending on the answer, interviewee will be asked to explain him / herself in detail

Cloud-Gaming is at its heart is a streaming service but for games, similar to Netflix. Most "Services" like that come with special service offerings, I would like to talk about that with you.

IV. Service

- **a.** Think of your most used gaming device, is the service provided sufficient enough for you or do you wish for more?
- **b.** How do you think will be the expectations of consumers towards cloud-gaming--services?
  - **i.** Why is that, please elaborate.
- **c.** Be creative, what would make you want to use cloud-gaming services instantly. (i.e.: free games…)

Nowadays customization can be seen everywhere, from Coca Cola bottles to Zoom Backgrounds. Let us discuss its importance in regards to cloud-gaming-services.

V. Users Freedom

- **d.** Have you ever made use of a customization / personalization option of any service-provider? (i.e., build your own playlist, change design layouts)

   i. Did you compare the scope of freedom you receive from that provider to its competitors?
   ii. How did you experience that freedom of customization?

e. What if there was a provider that offered more freedom to their users, would you consider switching?
   i. Why is that, please elaborate?

f. What is your overall perception on customization in services, do you think it is overrated or eventually even the way of the future?

Before we reach the end of our interview, I must ask you a few questions on your personal background.

VI. Demographics

a. How old are you?

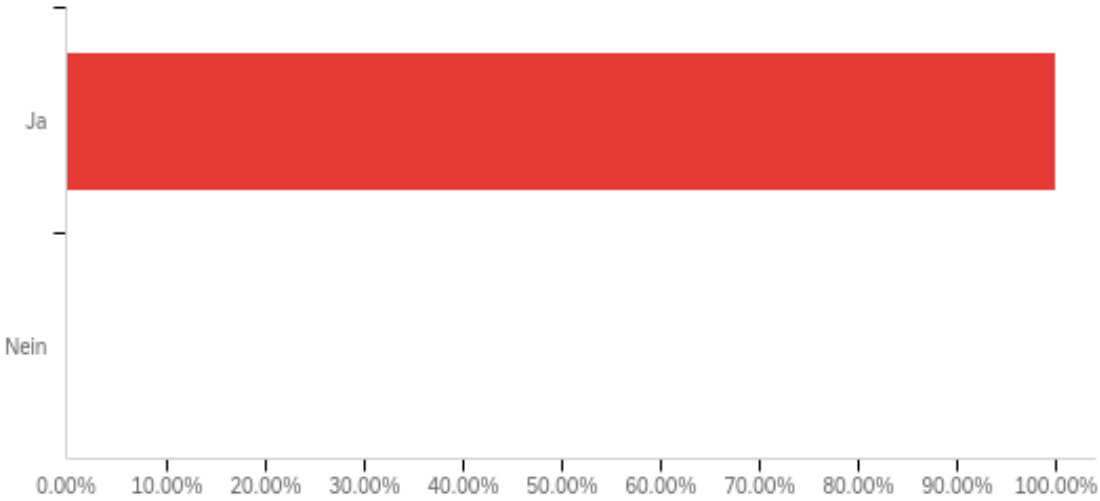
b. What is your gender?

That's it, we reached the end of our interview and discussion. At this point I would like to emphasize again that the interview will only be used for my master thesis and that all data will remain anonymous. Is there anything else you want to share with me about this topic?

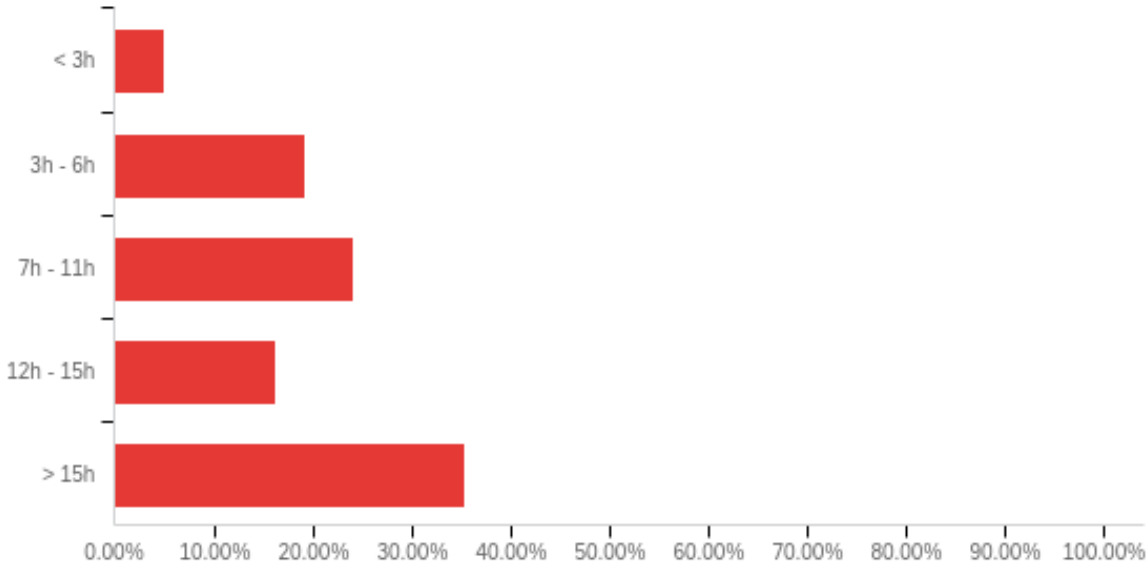
End of the Interview

Appendix B – Web Survey

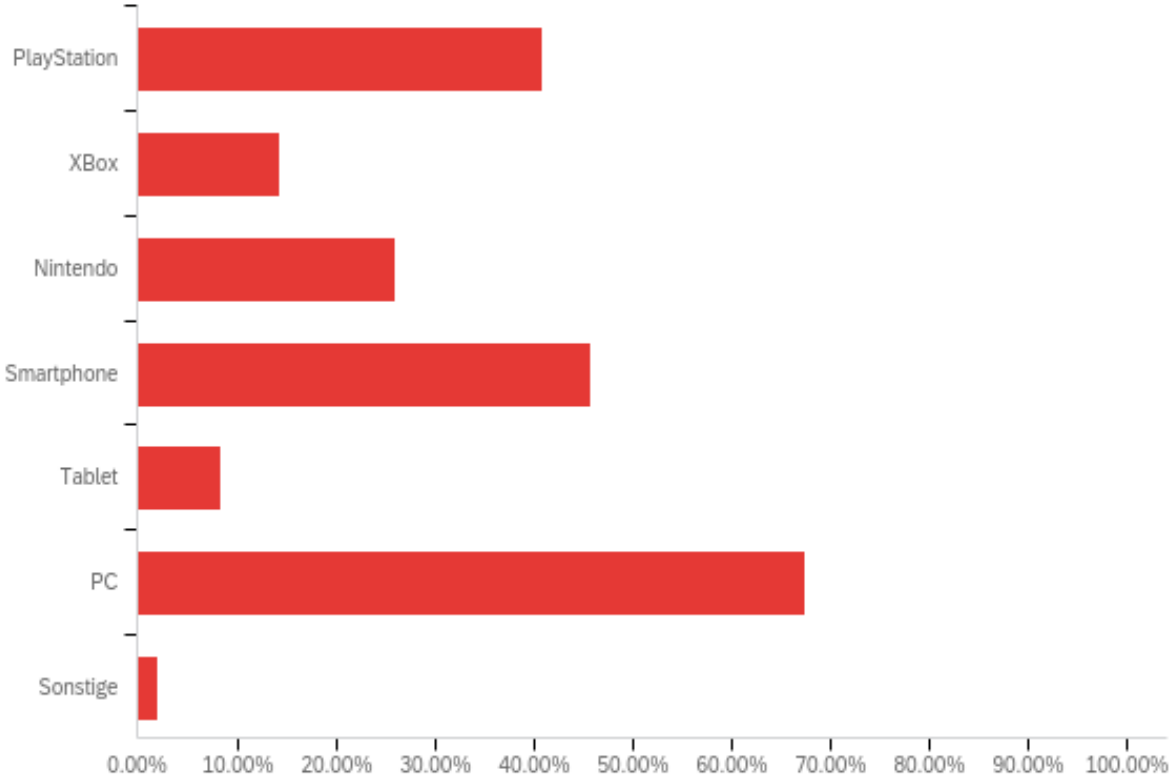
Q1 - Do you play video games?



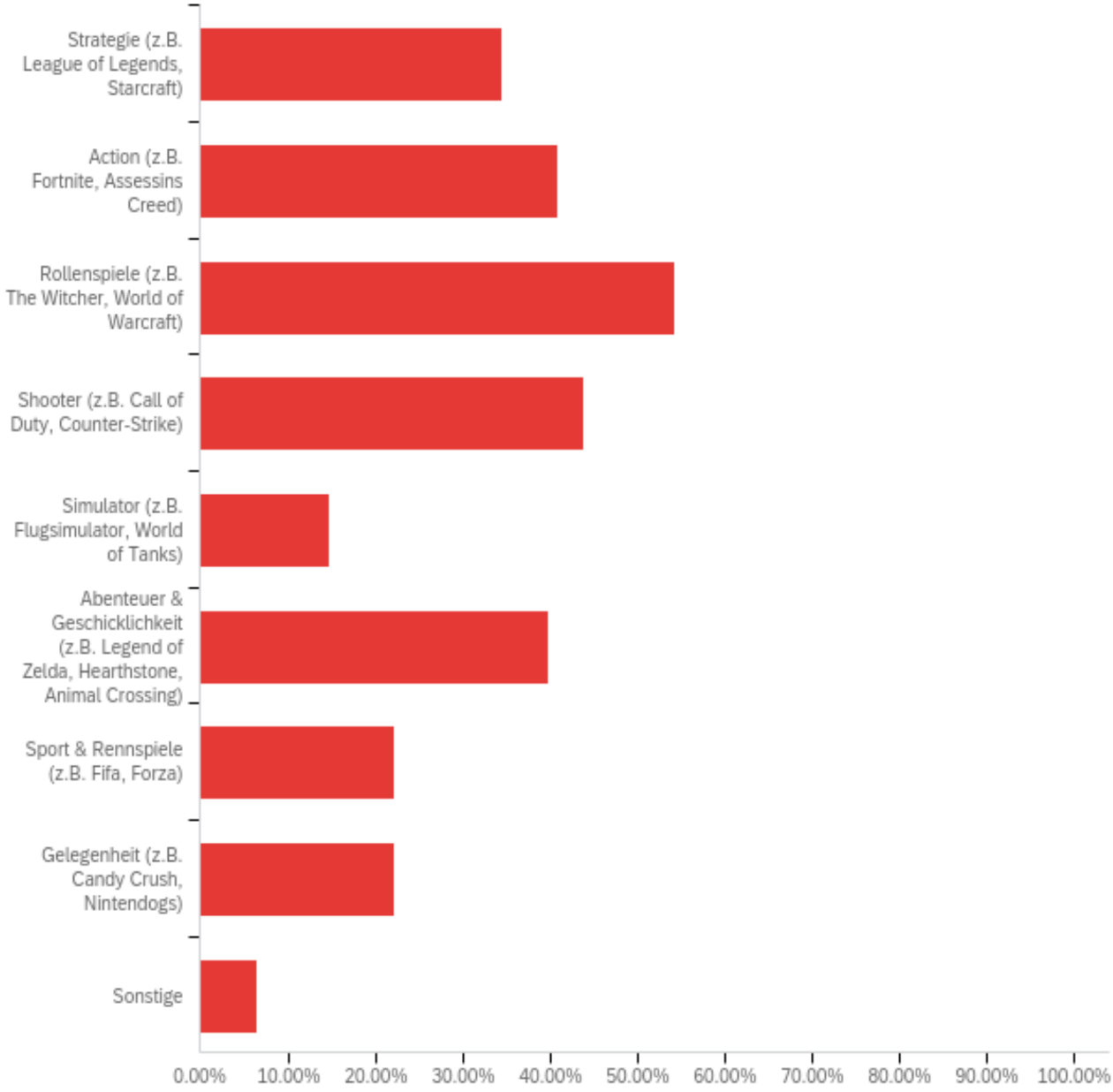
Q2 - How many hours have you spent playing video games in the last 7 days?



Q3 - Which of the following devices have you used for video games in the last month? (several answer options)



Q4 - Which of the following game genres have you played the most in the last month? (several answer options)

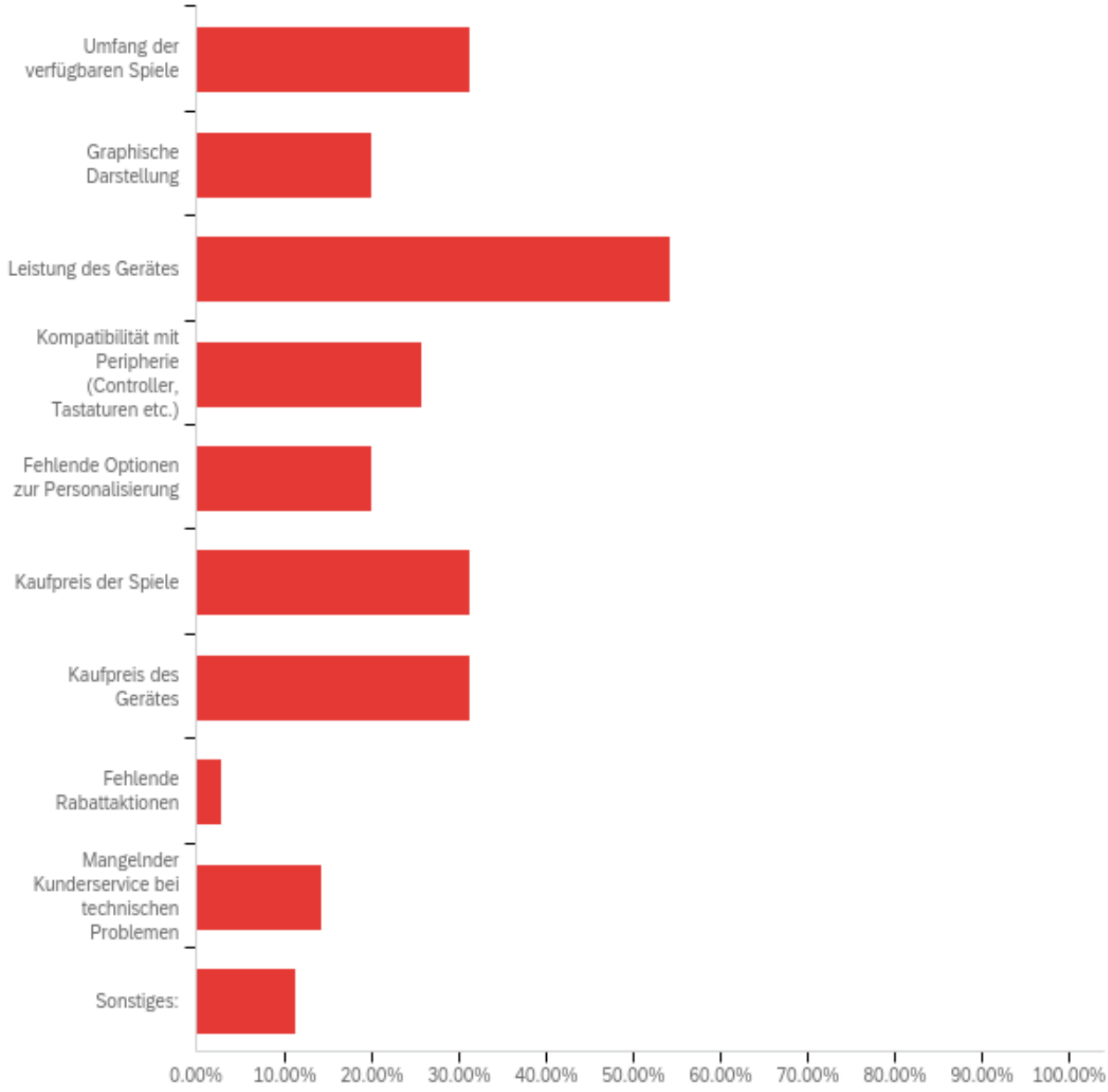


Q5 - How satisfied are you with the current solution?

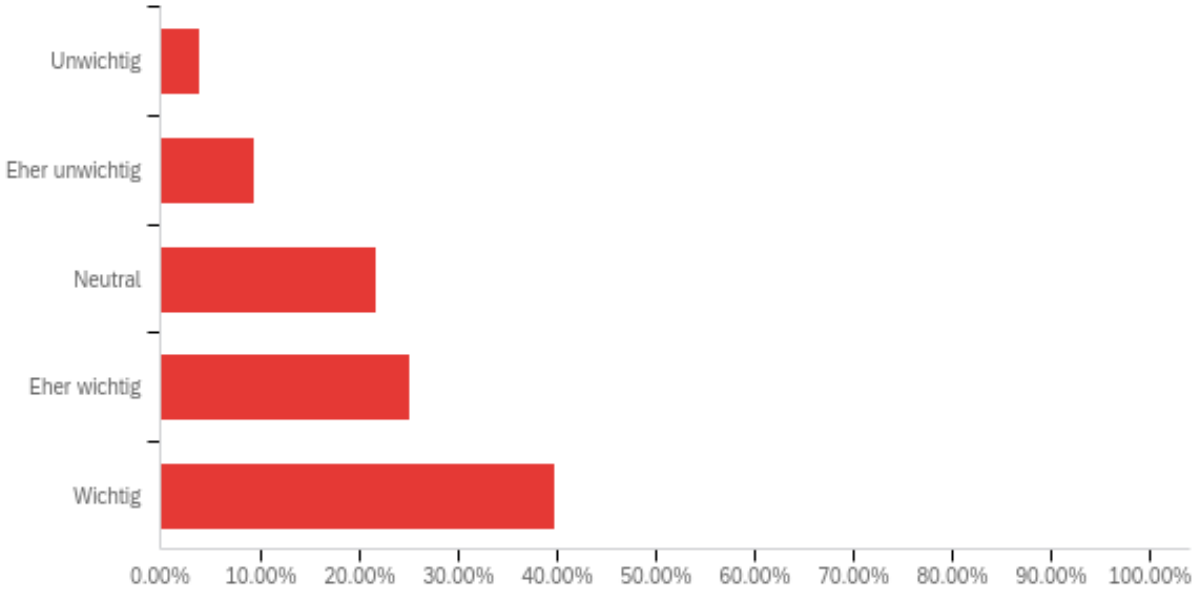
#	Field	Mini-mum	Maxi-mum	Mittel-wert	Standardabwei-chung	Abwei-chung	Anzahl
1	PlayStation	2.00	5.00	4.14	0.88	0.77	83
2	XBox	2.00	5.00	3.86	0.97	0.95	29
3	Nintendo	2.00	5.00	3.98	0.94	0.89	53
4	Smartphone	1.00	5.00	3.49	1.03	1.07	93
5	Tablet	2.00	5.00	3.65	0.90	0.82	17
6	PC	1.00	5.00	4.36	0.90	0.80	137
7	Sonstige	4.00	5.00	4.50	0.50	0.25	4

#	Frage	Unzufrieden	Eher unzufrieden	Neutral	Eher zufrieden	Zufrieden	Gesamt
1	PlayStation	0.00%	4.82%	18.07%	34.94%	42.17%	83
2	XBox	0.00%	10.34%	24.14%	34.48%	31.03%	29
3	Nintendo	0.00%	9.43%	16.98%	39.62%	33.96%	53
4	Smartphone	1.08%	18.28%	30.11%	31.18%	19.35%	93
5	Tablet	0.00%	5.88%	47.06%	23.53%	23.53%	17
6	PC	0.73%	5.84%	6.57%	29.93%	56.93%	137
7	Sonstige	0.00%	0.00%	0.00%	50.00%	50.00%	4

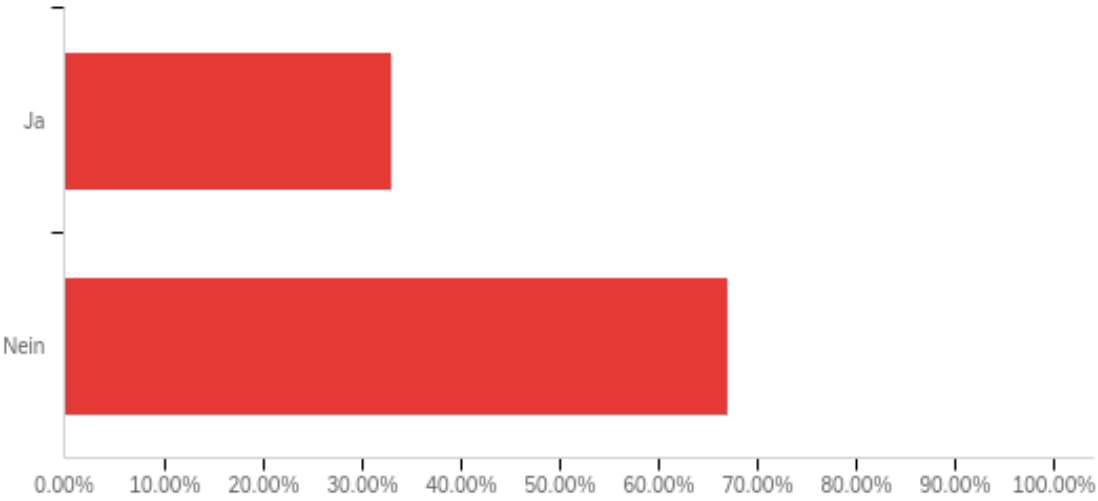
Q6 - Why are you dissatisfied with the solution? (several possible answers)



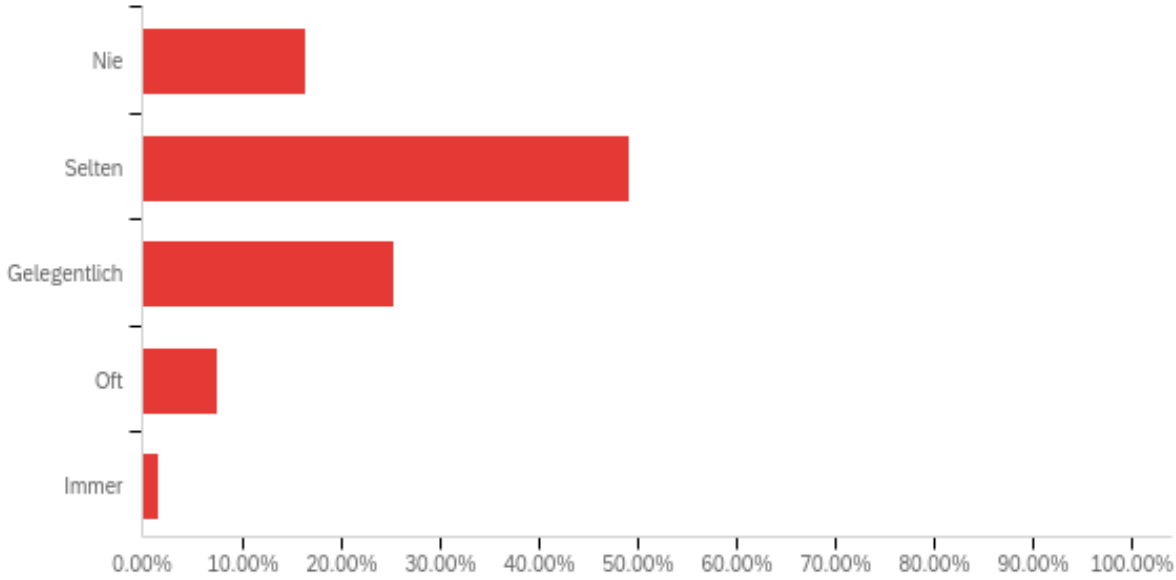
Q7 - How important is it to you to physically own the device?



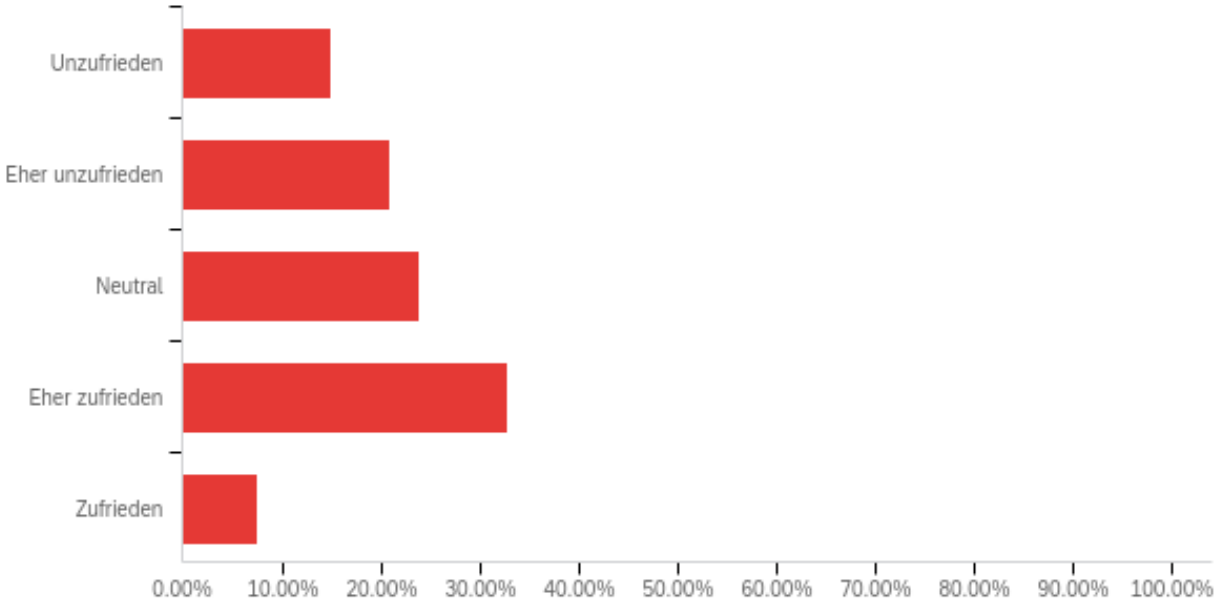
Q8 - Have you already used cloud gaming?



Q9 - How often do you use cloud gaming?



Q10 - How satisfied were/are you with your cloud gaming experience?

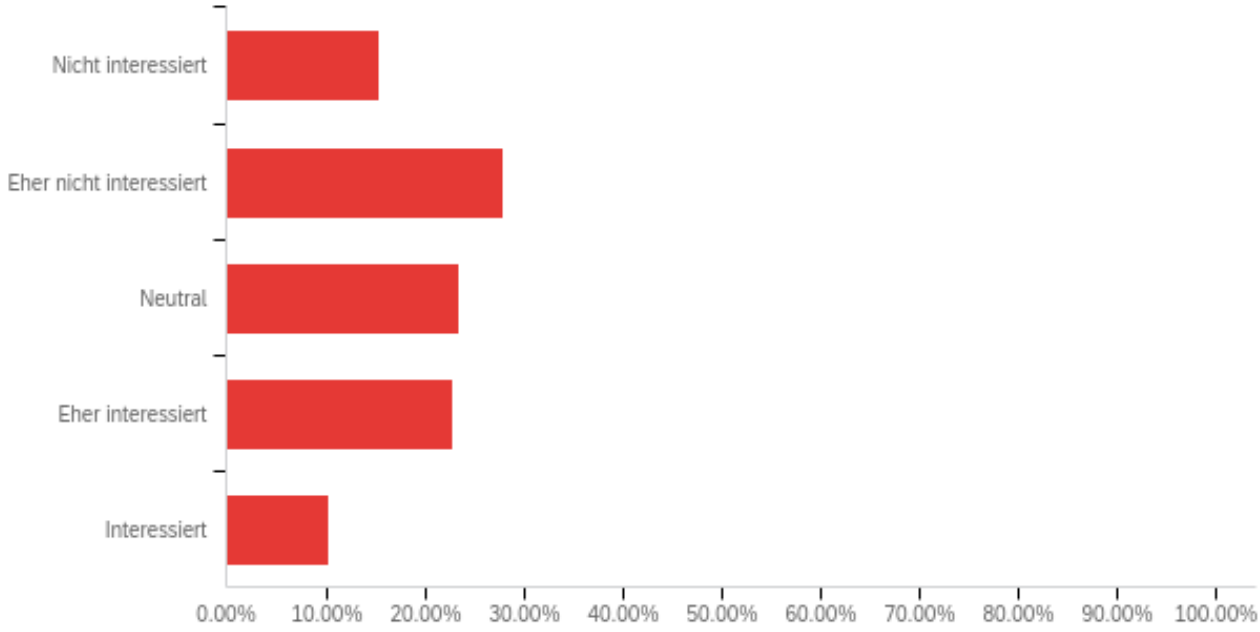


Q11 - Why were you dissatisfied with the cloud gaming service? (Key points or individual keywords are sufficient)

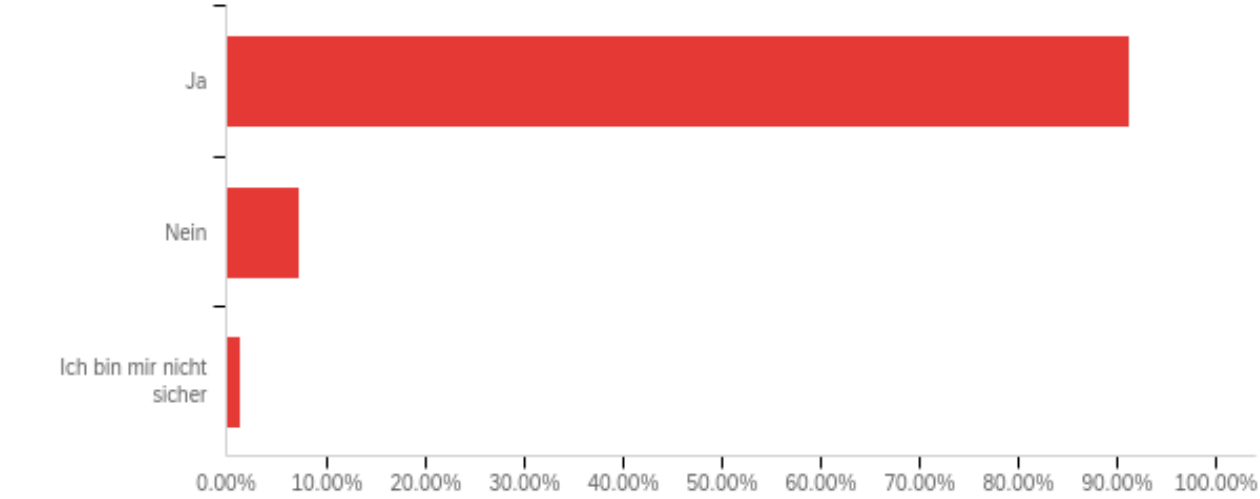
Wieso warst du unzufrieden mit dem Cloud-Gaming-Service? (Stichpunkte oder einzelne Schlagwörter reichen aus)
Kein Gerät/Router vorhanden das genug Leistung besitzt um cloudgaming flüssig darzustellen
Lag und Latenz... Cyberpunk war "in Ordnung", alles andere wollte einfach nicht
Verbindungsprobleme
Lags
- Performance
Internetinfrastruktur in Deutschland nicht gegeben (Stichwort: Glasfaser)
Latenz, Bildqualität
Latenz/input lag, Bildauflösung war auf full HD begrenzt, kein Ultrawide support
Zu viele lags, keine ordentlichen Server, benötigt man einfach nicht
sehr geringe Auflösung, Nur 60Hz, viel zu hohe Latenz, Grafisch nicht einstellbar, erzwungene Darstellung, zu hohe kosten
Man braucht eine sehr sehr gute Internetverbindung
Qualität und Stabilität
Meine Internetverbindung ist zu schlecht um das nutzen zu können. Und bei der Xbox ist dieser Dienst unnötig
Nur 720p bei 30fps verfügbarkeit
App lief nicht rund.
Lags, schwache Performance, weniger Einstellungsmöglichkeiten als offline
Schlechte Internetverbindung
Lag, auch bei gigabit leitung
Wechselhafte Internetgeschwindigkeit
Schlechte Bildqualität, Stuttering
(GeForce Now) Relativ kleine Auswahl an spielen, und verschiedene technische Probleme bzw schlechte Designentscheidungen, allerdings keine Lags oder dergleichen (hab ne 250 Mbit Leitung).
Delay, Fps cap (bezogen auf PsNow)
Delay, input lag zu groß (100-200ms deutlich spürbar)
Laggs, hoher internet snapruch
Internet abhängig.
Preisleistung + Vertragsbindung

Gelegentlicher Absturz
Was wenn die cloud irgendwann abgeschaltet wird. Kein Weiterverkauf bei digitalen Spielen möglich.
Spiele sind dauern abgestürzt
- Ich weiß nicht ob das alles sicher ist (Data/Bitcoin minen)
Da man eine gute Internetverbindung benötigt ist es für mich eher nicht geeignet da meine Leitung in der ganzen Familie genutzt wird
Höhere Latenz
Ich war zufrieden
Ist nicht so meins
Latenz
Qualität der Grafik (Artefakte) und sehr hoher input-lag.
Latenz, man besitzt Software nicht, Abhängig vom Dienst
Performance, Verfügbarkeit, Speicher
relativ teuer, max 1080p
war zufrieden, konnte aber dann einen pc kaufen
Ladeprobleme
Internet zu langsam
Input lag, enorme Ladezeiten
Habe lieber spiele physisch

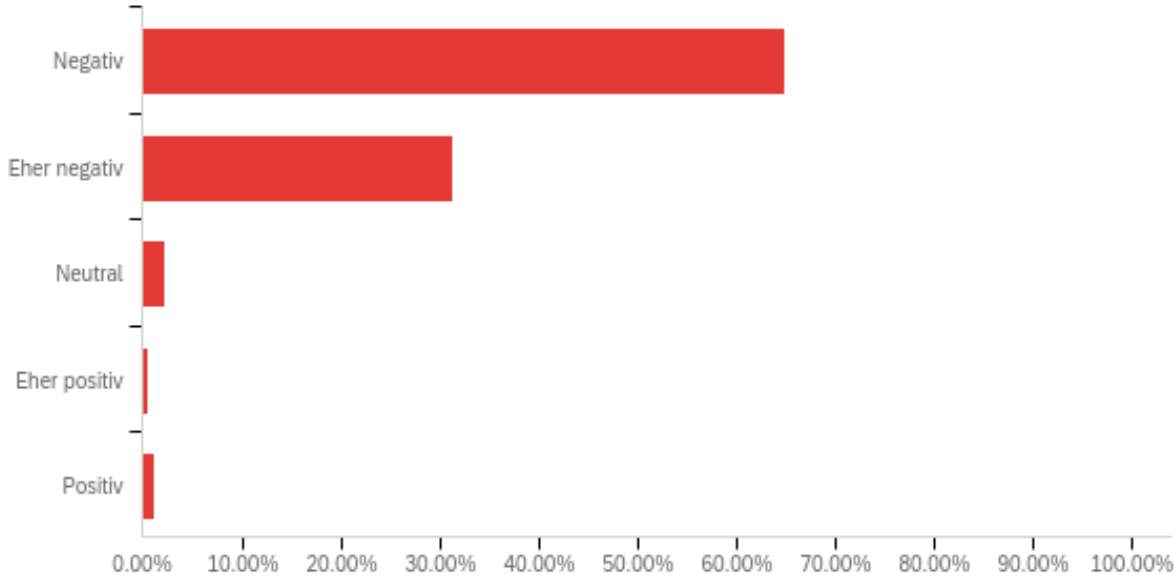
Q12 - How interested would you be in using cloud gaming?



Q13 - Have you ever had any "lag" while playing?



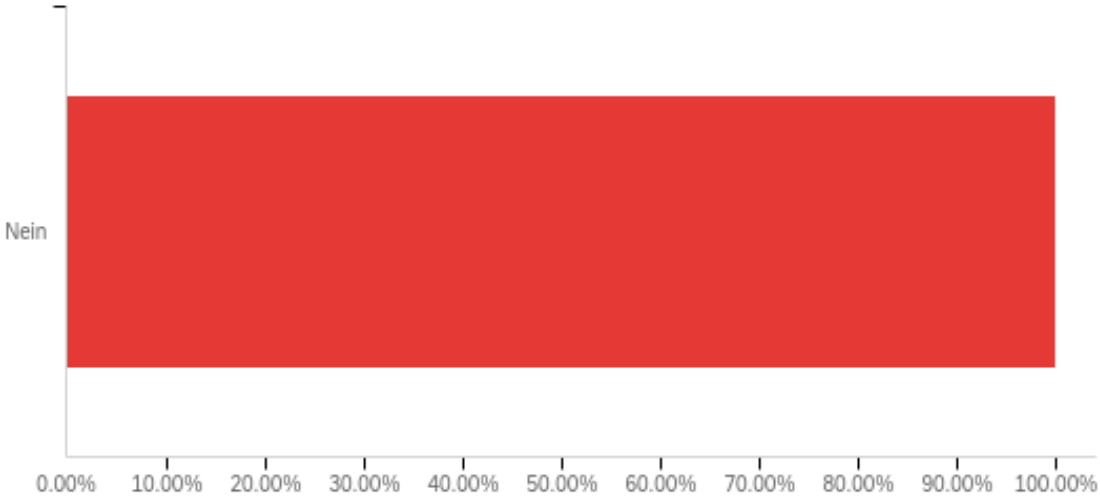
Q14 - To what extent did the "lag" affect your playing experience?



Q15 - To what extent does the following statement apply to you?

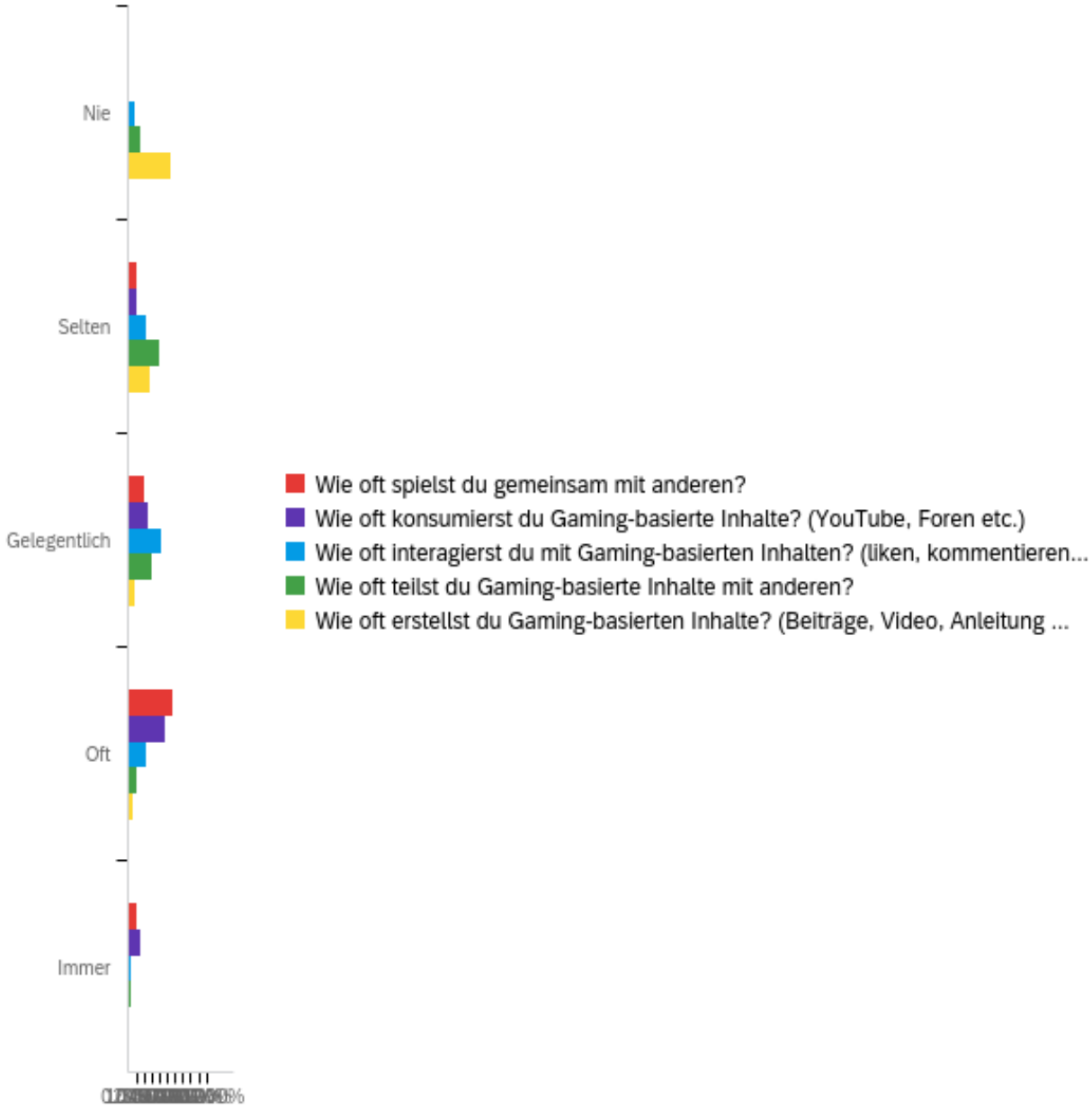
#	"Lags würden/ halten mich davon ab Cloud-Gaming zu nutzen"	Prozent
1	Trifft nicht zu	4.43%
2	Trifft eher nicht zu	7.88%
3	Neutral	20.69%
4	Trifft eher zu	30.54%
5	Trifft zu	36.45%
	Gesamt	203

Control question - Please select "No".

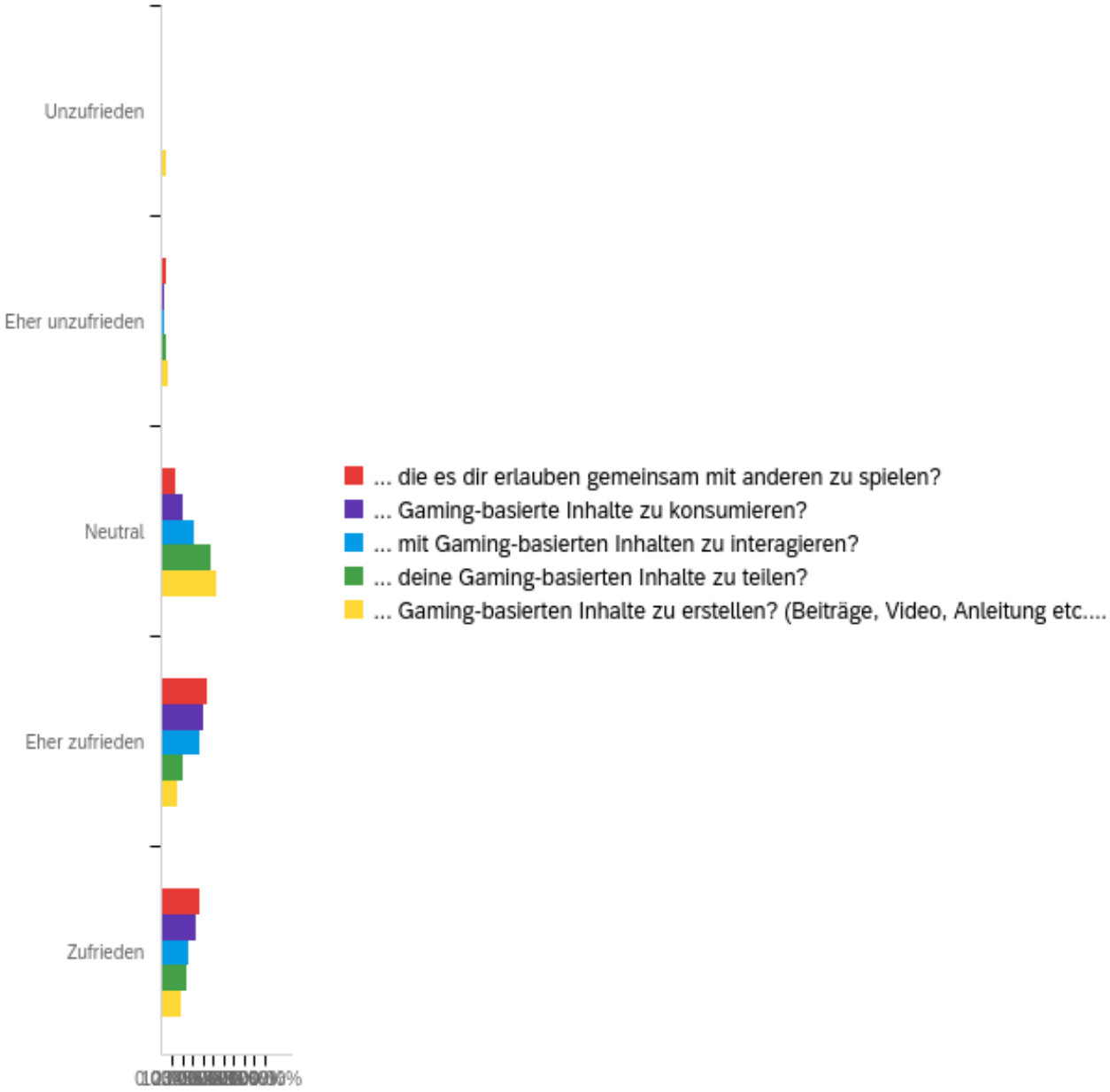


#	Field	Mini-mum	Maxi-mum	Mit-telwert	Standardabwei-chung	Abwei-chung	Anzahl
1	Bitte wähle "Nein" aus.	2.00	2.00	2.00	0.00	0.00	203

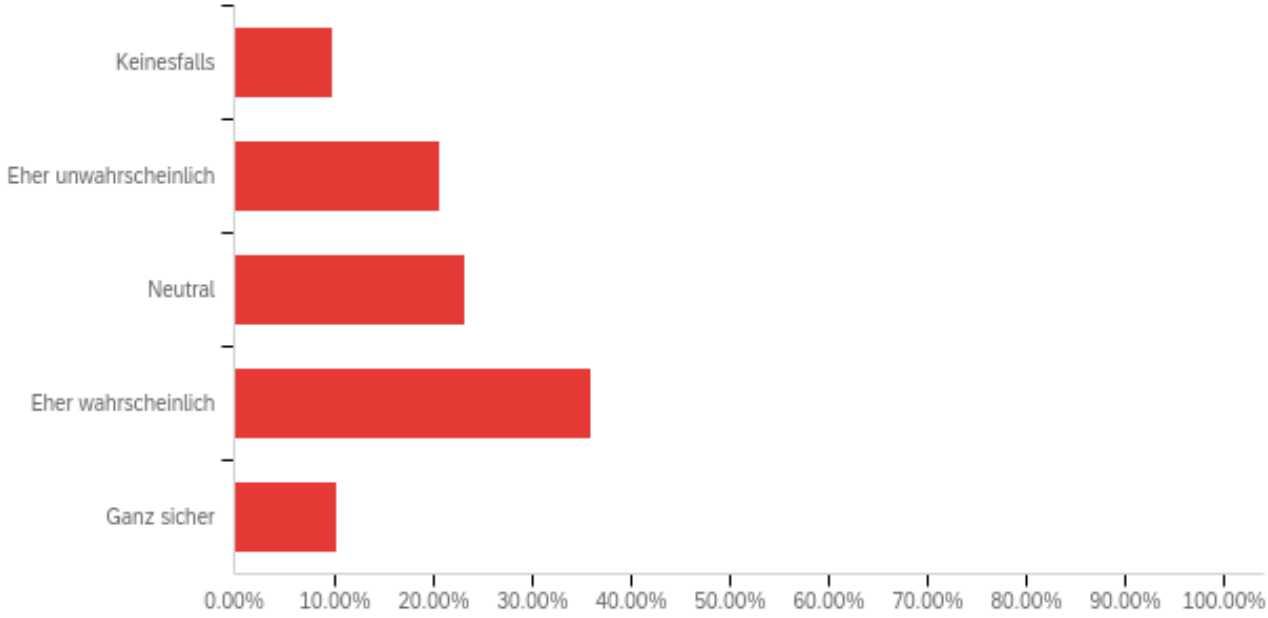
Q16 - How do you deal with gaming-based content?



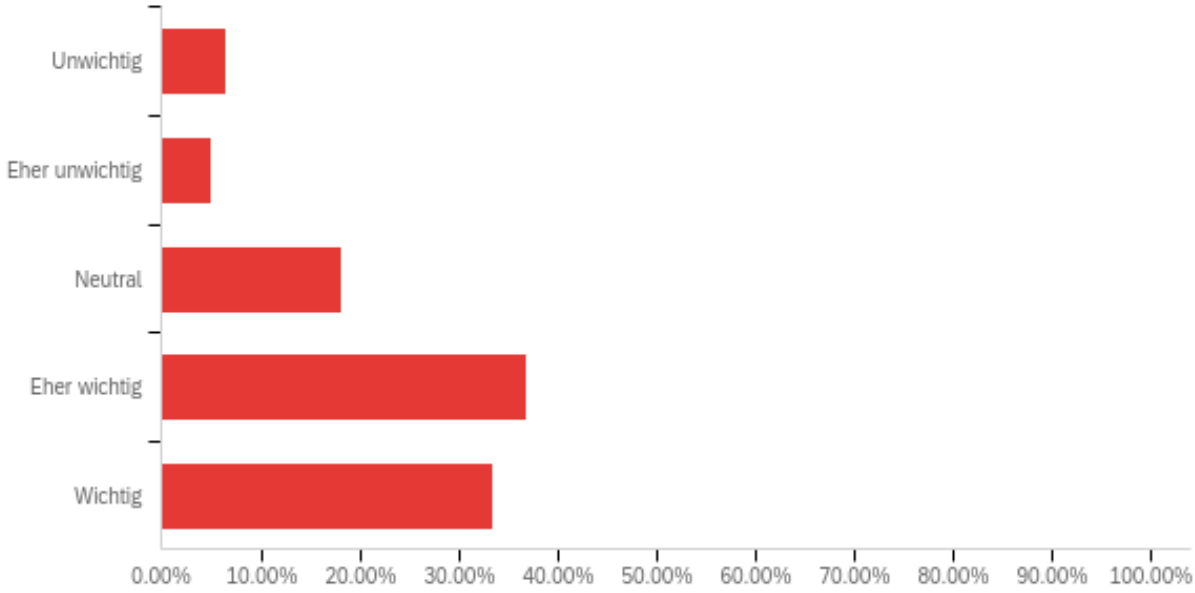
Q17 - How satisfied are you with the opportunities to ...



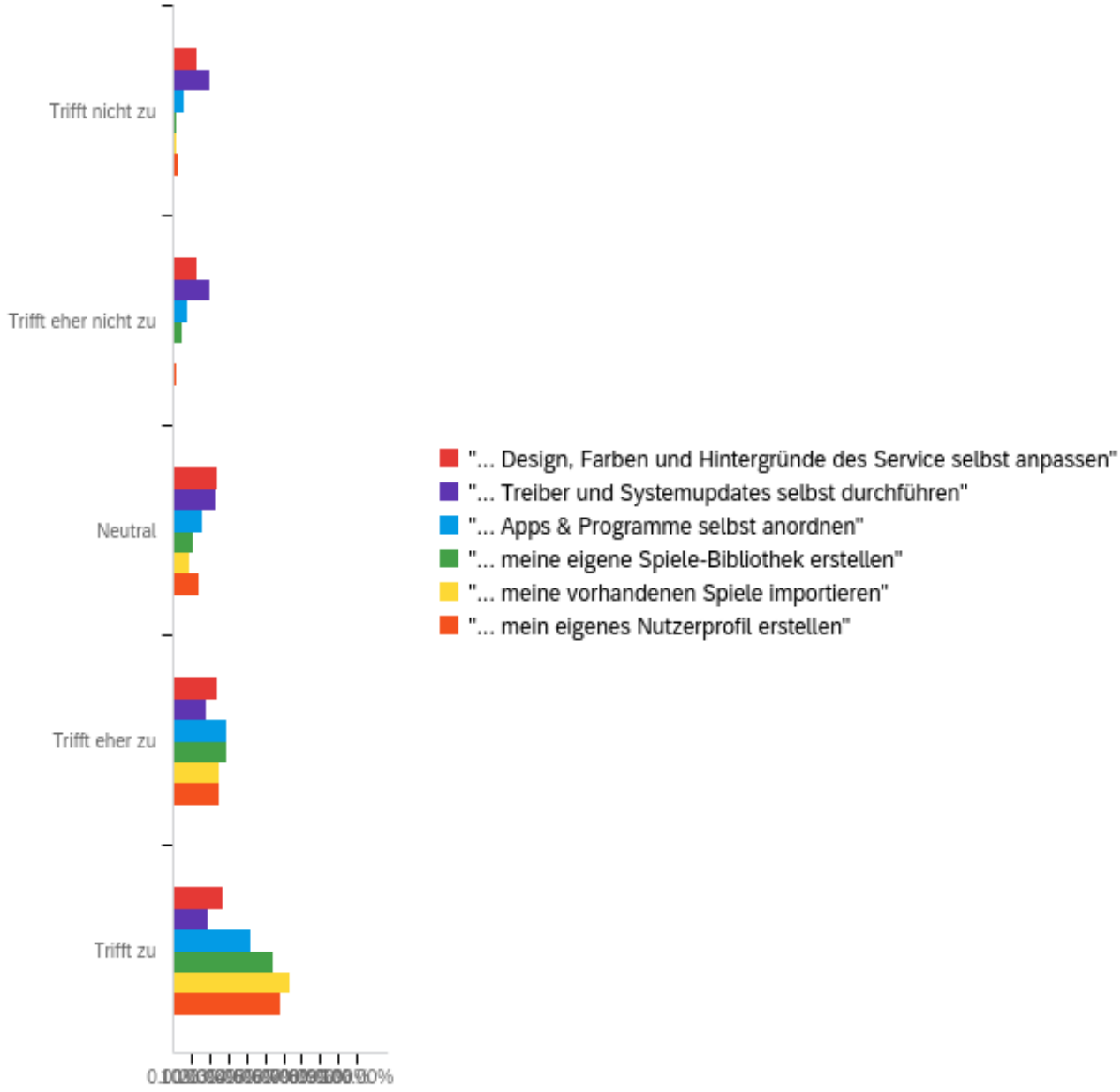
Q18 - If cloud gaming could offer you these opportunities in a better form, how likely is it that you would want to use cloud gaming services?



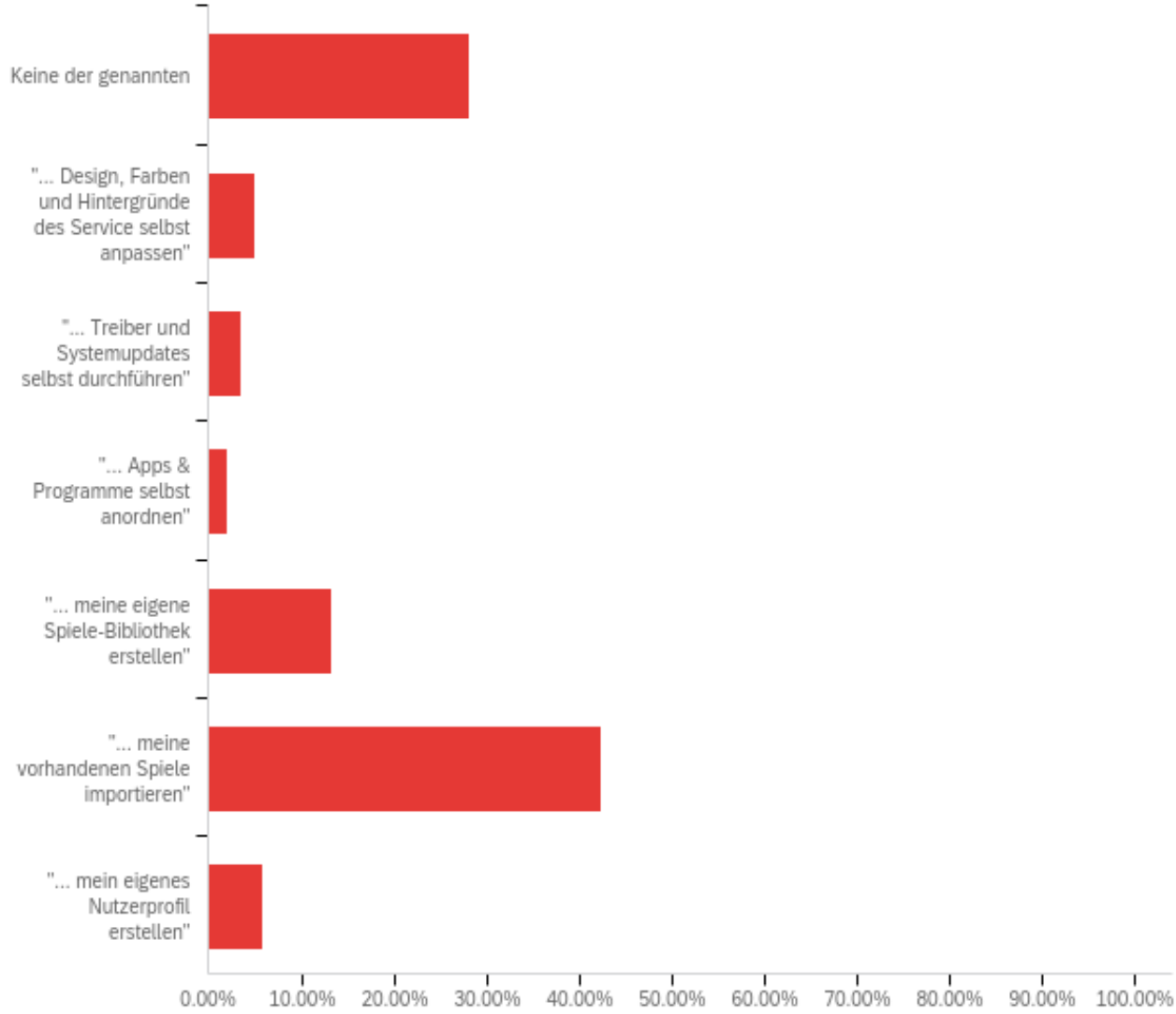
Q19 - How important is it for you to be able to customize your cloud gaming service to your needs?



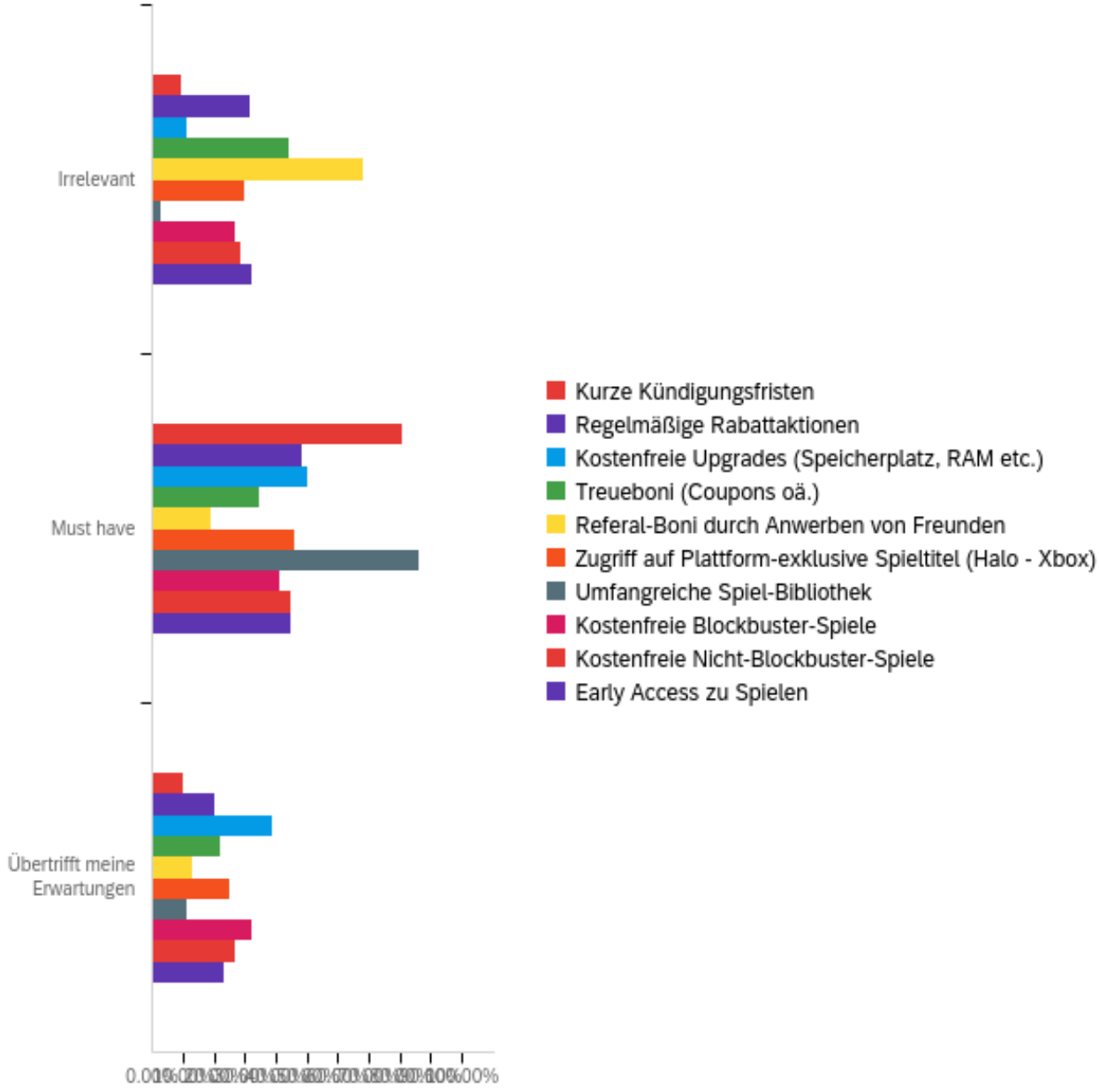
Q20 - To what extent do the following statements apply to you? "I would like to..."



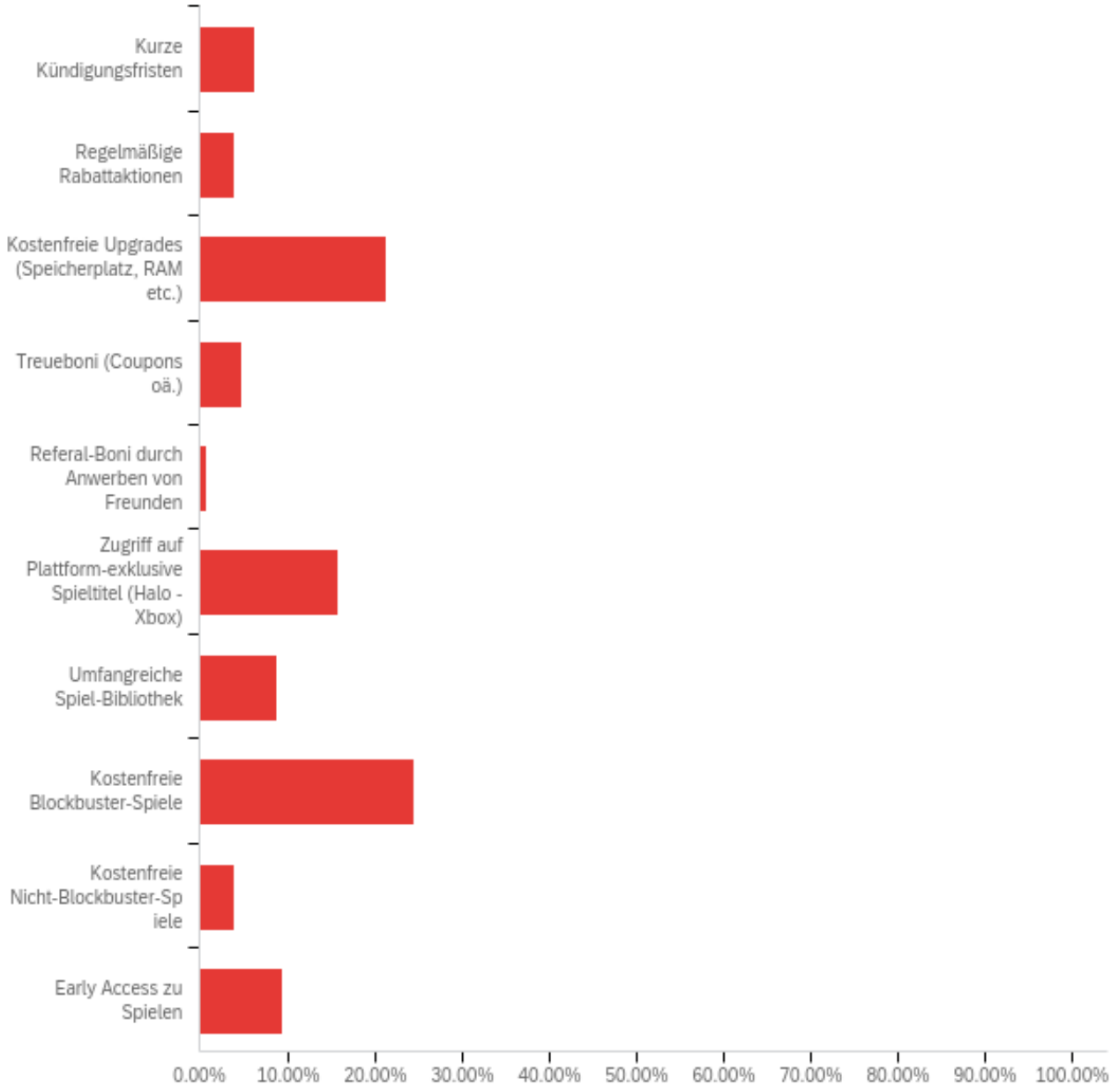
Q21 - Which of these personalization options would be most likely to persuade you to use cloud gaming services?



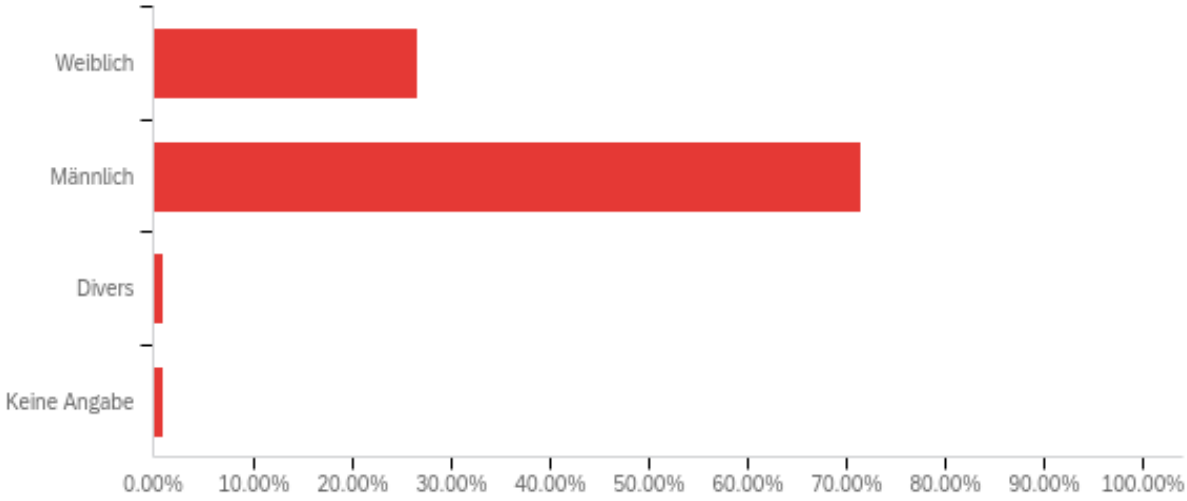
Q22 - Which of the following cloud gaming services would you consider must-haves and which exceed your expectations?



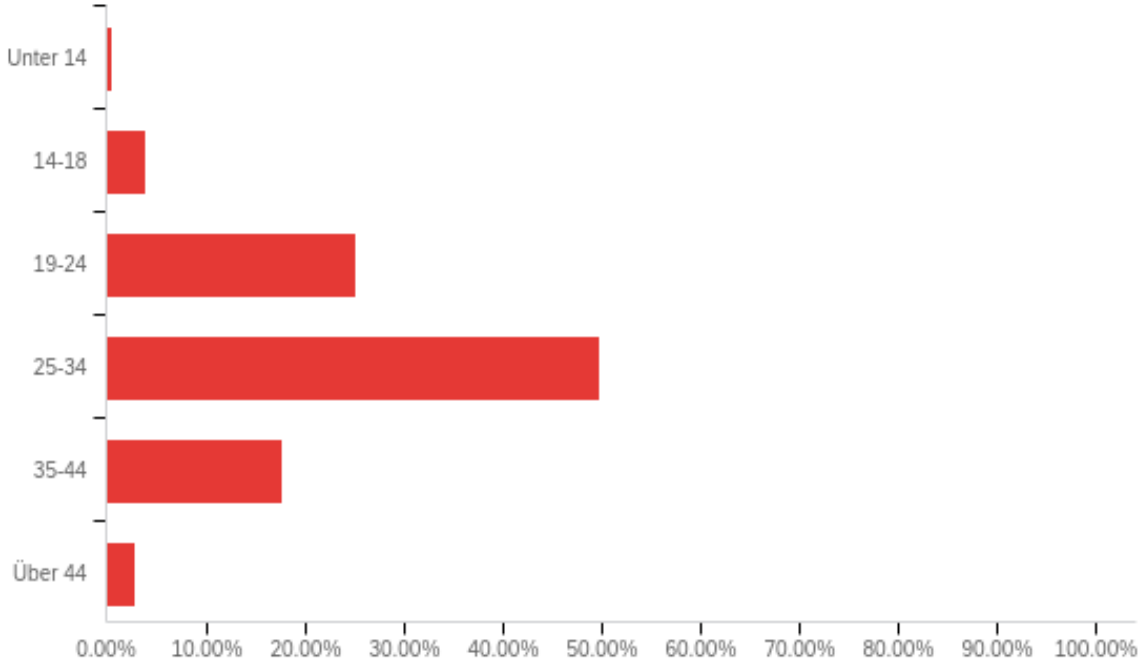
Q23 - Which service would most likely attract you to use cloud gaming service?



Q24 - What is your gender?



Q25 - How old are you?



Q26 - Raffle! Please enter your email address here.

Gewinnspiel! Bitte gebe hier deine E-Mail-Adresse an.
Torbirubi03@gmail.com
Besitze kein Paysafe, viel Erfolg mit deinem Studium
N4you87@t-online.de
yannickluger9@gmail.com
bazinga.bullz@gmail.com
fabiturner@web.de
k.c.gaethgens@gmail.com
alecrenner@googlemail.com
Maurice.t1992@gmail.com
aljoschajohn@gmail.com
bjoerndab@yahoo.de
jakohe@outlook.de
kremkus@mail.de
benedikt.huening@googlemail.com
malte.heeke@gmail.com
Mitcheg6@gmail.com
prismer1@gmx.de
samelus1998@outlook.de
Domenik1901@gmail.com
Kattensteert@aol.com
xgeilmatx@gmail.com
daniela.proeve@web.de
rot.brot@aol.de
Zhaliapvp@googlemail.com
mama_28@gmx.de
J.Schmitt93@gmx.de
andreas.neub.86@gmail.com

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Mysterio20@gmx.net

Jaccy1989@web.de

stadtmullerjana@gmail.com

punksasi@gmx.de

Demonicsugar@gmail.com

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josephinbiermann@gmail.com

logan183@gmail.com

danielcorsel.dc@gmail.com

julian@sperlich.at

ratchet444@gmx.de

alexmumie@web.de

d.tudor2779@gmail.com

k.gore@arcor.de

thommyrojko@googlemail.com

ramonlipp88@gmail.com

berserker.panda@hotmail.com

genis.loca@googlemail.com

RobinTreysse@t-online.de

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nancy.mueller91@t-online.de

michelleschumacher@gmx.at

Sfr9999@web.de

marco.heidenreich@gmx.de

Blackshial@gmx.de

Kreator.slayer@mail.de

xf187@gmx.de

brittakurzer24113@gmail.com

Alloshadow@web.de

Kontakt@nilsbluemel.de

abi_abdes@web.de

cwlnexus@outlook.de

panosleon24@gmail.com

Maxi.werkhausen@web.de

Hakushiro@gmx.de

mokuna@live.de

Manuel.Dauenheimer@gmx.de

Jan.tekath@web.de

dunkles.erwachem@gmx.de

darkiboy89@hotmail.de

Pat570@gmx.de

f.neubert.biz@googlemail.com

Red-cat.1993@hotmail.ch

Trashterm@mailbox.org

weberdennis398@googlemail.com

christianfischer1978@live.de

r.horwath@gmx.at

Alika40@outlook.de

Canina@gmx.ch

admin@stronzo.at

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Kolczynski32@gmail.com

ann-so97@gmx.de

max.wallenstein@gmx.net

kiyanBurton@googlemail.com

caroline@thalhofer-oettingen.de

jac_richter@web.de

avero_@outlook.de

Phillip.Woch@gmx.de

bulls.rad@gmx.net

popp_1994@web.de

anikahelmis@gmail.com

louiesex@aol.com

marlenpfeiffer@yahoo.de

Kolumbus.felzer@gmail.com

Jojo.jung@hotmail.de

Antonlerch@gmx.de

blacksynxis@gmx.de

surveys@pggns.de

rasmus002@web.de

tacoeliasde@gmail.com

YeetAccount2@gmx.net

c.crayven@googlemail.com

henning.bohle@googlemail.com

georg.armin@gmail.com

chinoe@web.de

marlonheider216@gmail.com

Monileiker@googlemail.com

johnascornelius@gmail.com

Michel.froeb@web.de

joksdergeilomat@gmail.com

zarghan@freenet.de

kirchner.5.niklas@gmail.com

max@groemcke.de

funk.lukas@gmx.de

drmauz@outlook.de

Optimus-prime@web.de

shayy977@gmail.com

munit2205@gmail.com

lukas.oehms@gmail.com

andrea3980@protonmail.com

hudmey@gmx.de

knallfrosch84@gmx.net

marc.mueller98@gmx.de

Tobias2.hafner@gmail.com
gbmaintal5@t-online.de
Natatum1983@gmail.com
Wuerl@yahoo.de
Msdip@t-online.de
nickchristophel2605@yahoo.de
Christopher.amf@gmx.de

Appendix C – Interview Coding-Analysis

Positive Keywords	Theme	Negative Keywords
wide range of options helpful community motivating engaging streaming guides important	Social Gaming-Community	too many options confusing login issues not userfriendly kids clickbait fake news low quality
curious alternative additional holiday suitable connected not physical	Attributes of Cloud-Gaming	sceptical internet dependency legal issues not physical
refreshing appealing competitive early access access exclusive games beta access to games large discounts Meeting high expectations Makes a difference	Scope of Service	unreliable labyrinth confusing unstructured takes too long unpersonal inflexible outdated legal concerns performance > service expectations
very important essential feeling of ownership customer is king make it "my own" differentiates from others stand out cool personal user experience	Customization of Service	confusing not intuitive unstructured incomplete unclear annoyed by standard software

Appendix D – Covariate, Correlation & Linear Regression Statistics

Tests of Between-Subjects Effects

Dependent Variable: Inwiefern hat das "Lag" dein Spielerlebnis beeinflusst?

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.230[a]	1	1.230	2.767	.098	.015
Intercept	346.684	1	346.684	779.914	<.001	.808
Cloud-Gaming User	1.230	1	1.230	2.767	.098	.015
Error	82.235	185	.445			
Total	459.000	187				
Corrected Total	83.465	186				

a. R Squared = .015 (Adjusted R Squared = .009)

Tests of Between-Subjects Effects

Dependent Variable: Wie zufrieden warst/ bist du mit deiner Cloud-Gaming-Erfahrung?

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6.219[a]	1	6.219	4.738	.033
Intercept	64.005	1	64.005	48.767	<.001
Einfluss von Lag	6.219	1	6.219	4.738	.033
Error	78.749	60	1.312		
Total	596.000	62			
Corrected Total	84.968	61			

a. R Squared = .073 (Adjusted R Squared = .058)

Tests of Between-Subjects Effects

Dependent Variable: Wie interessiert wärst du daran Cloud-Gaming zu nutzen?

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	71.913[a]	4	17.978	17.596	<.001	.350
Intercept	129.421	1	129.421	126.670	<.001	.492
Geschlecht	3.201	1	3.201	3.133	.079	.023
Alter	6.674	1	6.674	6.532	.012	.047
Stunden	.781	1	.781	.765	.383	.006
Besitzen	55.666	1	55.666	54.483	<.001	.294
Error	133.845	131	1.022			
Total	1307.000	136				
Corrected Total	205.757	135				

a. R Squared = .350 (Adjusted R Squared = .330)

Tests of Between-Subjects Effects

Dependent Variable: Wie interessiert wärst du daran Cloud-Gaming zu nutzen?

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	7.547[a]	1	7.547	5.102	.026
Intercept	48.385	1	48.385	32.711	<.001
Anpassbarkeit	7.547	1	7.547	5.102	.026
Error	198.210	134	1.479		
Total	1307.000	136			
Corrected Total	205.757	135			

a. R Squared = .037 (Adjusted R Squared = .029)

Tests of Between-Subjects Effects

Dependent Variable: Wie interessiert wärst du daran Cloud-Gaming zu nutzen?

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	60.186[a]	1	60.186	55.544	<.001
Intercept	283.311	1	283.311	261.461	<.001
Physischer Besitz	60.186	1	60.186	55.544	<.001
Error	146.282	135	1.084		
Total	1311.000	137			
Corrected Total	206.467	136			

a. R Squared = .292 (Adjusted R Squared = .286)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.090	.315		16.170	<.001
	Wie wichtig ist es dir, das Gerät physisch zu besitzen?	-.577	.077	-.540	-7.453	<.001

a. Dependent Variable: Wie interessiert wärst du daran Cloud-Gaming zu nutzen?

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.673	.580		8.056	<.001
	Wie alt bist du?	-.300	.118	-.213	-2.550	.012
	Was ist dein Geschlecht?	-.390	.203	-.161	-1.924	.057

a. Dependent Variable: Wie interessiert wärst du daran Cloud-Gaming zu nutzen?

Appendix E – Further Descriptive & Frequency Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
"Ich möchte..." - "... Design, Farben und Hintergründe des Service selbst anpassen"	204	1	5	3.40	1.344
"Ich möchte..." - "... Treiber und Systemupdates selbst durchführen"	204	1	5	2.98	1.400
"Ich möchte..." - "... Apps & Programme selbst anordnen"	204	1	5	3.95	1.175
"Ich möchte..." - "... meine eigene Spiele-Bibliothek erstellen"	204	1	5	4.30	.959
"Ich möchte..." - "... meine vorhandenen Spiele importieren"	204	1	5	4.49	.815
"Ich möchte..." - "... mein eigenes Nutzerprofil erstellen"	204	1	5	4.35	.937
Valid N (listwise)	204				

Welche der folgenden Service-Dienste im Bereich Cloud-Gaming würdest du als "Must-haves" betrachten und welche übertreffen deine Erwartungen? - Kurze Kündigungsfristen

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Irrelevant	19	9.3	9.3	9.3
	Must have	165	80.5	80.9	90.2
	Übertrifft meine Erwartungen	20	9.8	9.8	100.0
	Total	204	99.5	100.0	
Missing	System	1	.5		
Total		205	100.0		

Group Statistics

	Hast du Cloud-Gaming bereits genutzt?	N	Mean	Std. Deviation	Std. Error Mean
Inwiefern hat das "Lag" dein Spielerlebnis beeinflusst?	Ja	62	1.53	.783	.099
	Nein	125	1.36	.601	.054

Group Statistics

	Hast du Cloud-Gaming bereits genutzt?	N	Mean	Std. Deviation	Std. Error Mean
Wie wichtig ist es für dich deinen Cloud-Gaming-Service individuell an deine Anforderungen anpassen zu können?	Ja	68	4.00	1.079	.131
	Nein	136	3.79	1.149	.099