Esports as a Novel Way of Socializing and Networking for Students and Businesses, In and Beyond COVID-19 Times

Master Thesis

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I. Preface

Before you lies the master thesis: “Gaming as a Novel Way of Socializing and Networking for Students and Businesses, in and Beyond COVID-19 Times”. This thesis has been written to fulfill the graduation needs of the master program Interaction Technology at University of Twente. I was involved in researching and writing this thesis from February 2021 to February 2022.

The core of this thesis is a survey on different types of gamers and how they perceive Esportsladder and future functionalities. Esportsladder should facilitate a safe space for students and businesses to connect to network and to socialize amongst each other. Especially in times of COVID-19 times, such a platform can open novel ways to broaden possibilities to do so.

I would like to thank my supervisors for their guidance; thank you for believing in my abilities, this gave me the confidence to trust in my ideas. I also appreciate the communication, without our weekly 30 minutes, I would not be nearly as satisfied about this thesis as I am now. I also wish to thank all the respondents and the people that showed interest in my graduation project: I always appreciated hearing about different perspectives about this project and related topics.

II. Abstract

Esportsladder is an initiative of University of Twente to facilitate socializing and networking opportunities for students and businesses. This thesis consists of two main parts: five exploratory research methods and a survey. The key aim of this thesis is to research to what extend Esportsladder can engage a wide variety of people with Esportsladder. The main finding of the exploratory research methods showed that it was difficult to onboard people in a ladder competition. The exploratory research methods also discovered the Risks for Onboarding (RFO). The Type Of Gamer scale (TOG) is constructed as a measure to categorize gamers into different categories: non-gamers, casual gamers and hardcore gamers. The scale is used in the survey and is measured by self-observed behavior of the respondents by rating six statements. The TOG gives insight into characteristics that different Types Of Gamers possess and which potential features of Esportsladder would possibly appeal to them. The research model used for this research is buildup of the constructs RFO and TOG and enhanced with validated, traditional constructs from the Technology Acceptance Model (TAM).

On a practical level it has been concluded that it is worth trying out to design a spectator functionality, a casual gaming competition and a social feed for Esportsladder. This might help in engaging more different kinds of gamers and onboarding non-gamers.

On a scientific level it has been concluded that there are significant relations between the Type of Gamer, the risks for onboarding, the perceived Usefulness and the Intention to Use Esportsladder. The model shows a slightly significant correlation between all constructs.

Key words: TAM, gamification, Esports, social gaming, business gaming, Perceived Usefulness, Intention to Use

III. List of Acronyms

Esports	Electronic Sports
ITU	Intention to Use Esportsladder
PU	Perceived Usefulness
RFO	Risks for Onboarding
TAM	Technology Acceptance Model
TOG	Type of Gamer scale

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1. Introduction

To cope with COVID-19, authorities from all over the world introduce measures to contain the virus. People were urged to work from home and to remain social distance (Hammami et al., 2020). Most leisure activities at the workplace are not able to take place within these restrictions (Maurer, 2020). Social contact is primarily limited to online gatherings. The pandemic impacts the overall health of people (Xiao et al., 2021). Xiao stated that, lack of *communication with co-workers* plays a large role in the decline in overall health of employees.

When social distancing becomes a necessity for leisure activities, using Esports as a medium emerged as a logical alternative to a research team from the University of Twente. Given that Esports mainly takes place via screens and internet connection, it might have the potential to create and maintain social relationships without location specific restrictions. Therefore, an Esports platform named Esportsladder is in development at the time of writing. Esportsladder aims to connect businesses and students with ladder style Esports competitions during and beyond the pandemic.

To grasp the potential of Esportsladder, an understanding in the field of Esports and gaming is vital. The next sections are dedicated to define and explain different perspectives on Esports and gaming.

1.1 Defining Esports

While the official definition of Esports is still under debate (Ke & Wagner, 2020), Esports usually refers to a type of sport where the initial aspects exist out of electronics: the input and output of the Esports systems are human computer interfaces. In more applied terms, Esports refers to competitive gaming (Hamari & Sjöblom, 2017; Kempe-Cook et al., 2019). Today, thousands of professional Esports athletes train fulltime to join the most prestigious tournaments to win money and to gain fame. Freeman and Wohn (2017) reviewed multiple articles to define Esports. Based on different perspectives and definitions from the research plus 26 interviews with Esports players, they concluded that there are three different perspectives regarding Esports.

(1) Esports as a computer mediated sport: Esports in the light of traditional sports like tennis and football. Esports, as well as traditional sports have comparable qualities such as training psychical and mental abilities. This perspective on Esports, looks at Esports as a traditional sport. The gear that is needed to game can be seen as equipment like a tennis racket.

(2) *Esports as competitive computer gaming:* This perspective on Esports focusses on the gaming experience and game mechanics. The competitional aspect of Esports directly motivates players to improve their skills in gaming and become better at it.

(3) *Esports as spectatorship:* by the development of streaming services like YouTube and Twitch, it is possible for streamers and spectators to interact with each other. The possibility to do so, makes it an engaging experience for both the gamers and audience. Spectatorship is seen as the main difference between Esports and standard gaming. The goals of a spectator range from casually watching the game to becoming a true fan in competitive gaming (Cheung, 2011). Twitch makes it possible to interact with other viewers and even with the streamer. Twitch is the leading site in broadcasting games via personal channels. Everyone can stream while playing games and gather an audience on this platform (Deng et al., 2016; Kempe-Cook et al., 2019).

For the remainder of this report, all three perspectives on Esports will be considered and utilized in order to maximize the potential of Esportsladder.

1.2 Defining gaming and type of game(r)s

While the definition of gaming is always adapting to the rapid innovations in the world of gaming, a recent proposal to define gaming is by Bergonse (2017). He defines gaming as "*a mode of interaction between a player, a machine with an electronic visual display, and possibly other players, that is mediated by a meaningful fictional context, and sustained by an emotional attachment between the player and the outcomes of her actions within this fictional context*." Bergonse points out that this definition is not definitive because gaming will probably adjust in the future.

Next to defining gaming, defining type of games and gamers is important because Esports can't exist without games and gamers. To get a better understanding about types of games and gamers, a literature review about gamer types is performed. In current literature, there mainly are two types of gamers. Namely, the casual gamer and the hardcore gamer. In the context of gaming, people who do not game are referred to as non-gamers. These terms will be used for the remainder of this research. In the next section these terms will be further defined.

1.2.1 Casual

'Casual' is frequently taken to refer to the game, the player or the playing style. Views on casual games and casual gamers vary and can cause confusion. It leads to a paradox when 'casual gamer' is taken to refer to someone who plays casual games and someone who 'plays casually'. Kuittinen et al. (2007) did research to define the terms and concluded that there is a major difference between these terms: casual game, casual gaming, casual playing, casual gamer, and

casual game player. All terms are elaborated on shortly and will be used for the remaining of this thesis.

> *Casual game.* A casual game has certain properties that can be described as casual. For example, casual games have appealing content, easy controls and are simple to learn. These properties vary per game. Players who play these games don't have to be casual gamers.
>
> *Casual gaming.* The approach towards gaming is casual. Casual gaming is perceived as an activity for leisure just like sports, or movies. The game does not have to be a casual game.
>
> *Casual playing.* The way a game is played is casual. This refers to the play session more than the approach towards gaming. For example, a game is played in short time intervals or without full focus.
>
> *Casual gamer.* Someone who plays games in a casual state. The games played by a casual gamer don't have to be casual games.
>
> *Casual game player.* Someone who plays casual games. Casual game players often don't perceive themselves as actual gamers (Cheng & Amsterdam, 2011; Poels, 2012).

Casual games are mainly designed for the mass consumer. Some famous examples of casual games are Candy Crush Saga, Temple Run 2 and Clash of Clans. These kind of games are easy to access, do not need gaming skills and are fast to learn (Cheng, 2011; Kuittinen et al., 2007). Often, they can be played on smartphones or regular laptops, there is no need for special equipment like an expensive gaming computer. According to Cheng, common elements in the game design of casual games are:

(1) Goals and rules must be clear.
(2) Reaching skill in the game goes quickly.
(3) The game easily fits into a gamer's agenda.
(4) The theme in the game often is based on real-life events.

Time investment is another aspect that players might consider. How much time a player is willing to invest in learning the game and becoming good at the game. The length of sessions is also connected to this. The idea of a 40-minute-long League of Legends session might scare away casual gamers to learn the game (Paaßen et al., 2016).

Casual gamers make up the silent majority of gamers (Tausend, 2006). The demographics are different from the demographics of hardcore gamers. Casual gamers exist in every age group.

Somewhat surprisingly, women between the age of 35 and 50 are the largest group (Kuittinen et al., 2007).

1.2.2 Hardcore

At the other end of the spectrum, the term 'hardcore' comes into place. In hardcore games, players must invest more time or skill training to obtain a satisfactory gaming experience (Tausend, 2006). As Tausend explains, hardcore games usually include more complex game controls then casual games. The overall complexity in terms of the investment required to play or obtain the game is also higher.

'Hardcore' can also refer to the game, the playing style and the gamer. All terms are elaborated on shortly and will be used for the remainder of this thesis.

Hardcore game. A hardcore game has certain properties that can be described as hardcore. For example, the controls are hard to learn, and it takes more time to reach a satisfying skill level. These properties vary per game. Players who play these games do not have to be hardcore gamers.

Hardcore playing. The way a game is played is hardcore. This refers to the play session more than the approach towards gaming. For example, a game is played in long time intervals, with full focus. The game does not have to be hardcore game.

Hardcore gamer. Someone who plays games in a hardcore state. The games played by a hardcore gamer do not have to be hardcore games.

Hardcore game player. Someone who plays hardcore games. This does not have to be a hardcore gamer

1.3 Background

The unique aspect of Esportsladder is Esports and gaming and using that as a tool to facilitate network and socializing opportunities between businesses and students. Therefore, a general introduction to Esports and types of gamers is provided, and background research is conducted. This section explores the history of Esports, Esports and socializing and lastly, how categorizing different types of gamers is done in other literature.

1.3.1 History of Esports

To illustrate the increasing popularity of Esports in the world, a timeline and historical facts are presented in this chapter. Esports has been rising in popularity over the last few years. Its origins lay in the 70s because arcade games are the pioneers of the Esports nowadays (Striner et al., 2020). The development of Esports is directly dependent on technological development as well as the appearance of innovative games (Besombes, 2019). Besombes created a timeline

that represents every major invention and occurrence that influenced the Esports world of today. This timeline can be seen in Figure 1.

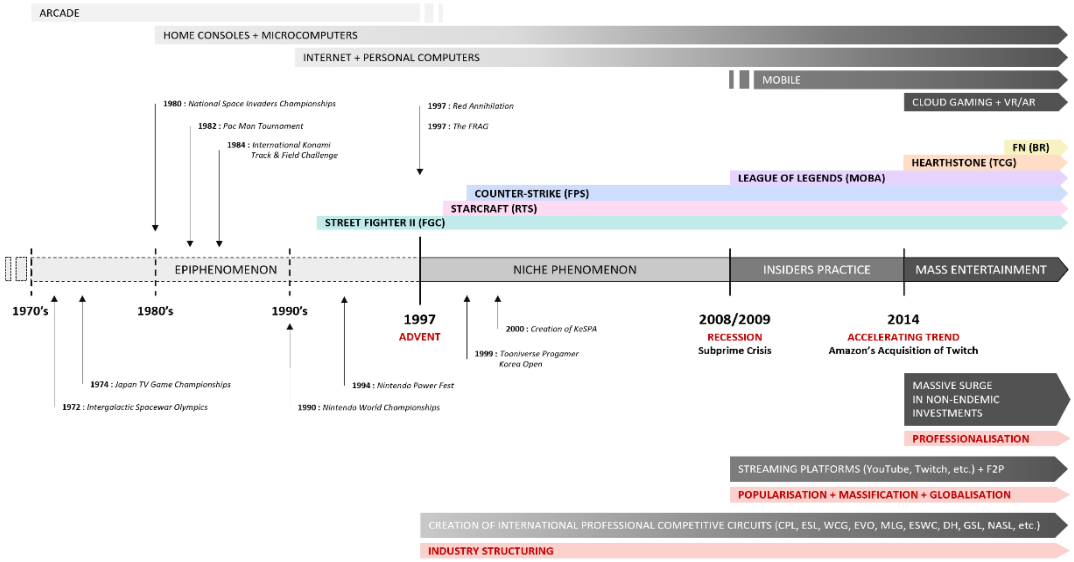

Figure 1: Esports timeline (Besombes, 2019).

According to Besombes, Esports is seen as a niche since 1997. A relatively modest amount of people was interested, and the prize money was very little in contrast with todays, as can be seen in figure 2.

In 2008, the worldwide recession hits the Esports branch severely. However, with the rise of Esports platforms such as YouTube and Twitch, the branch recovers rapidly. In 2014, Amazon invests in Twitch, which shows their trust in Esports and sends a powerful message into the world. Esports gains more and more attention and Esports is a mainstream mass entertainment ever since (Besombes, 2019).

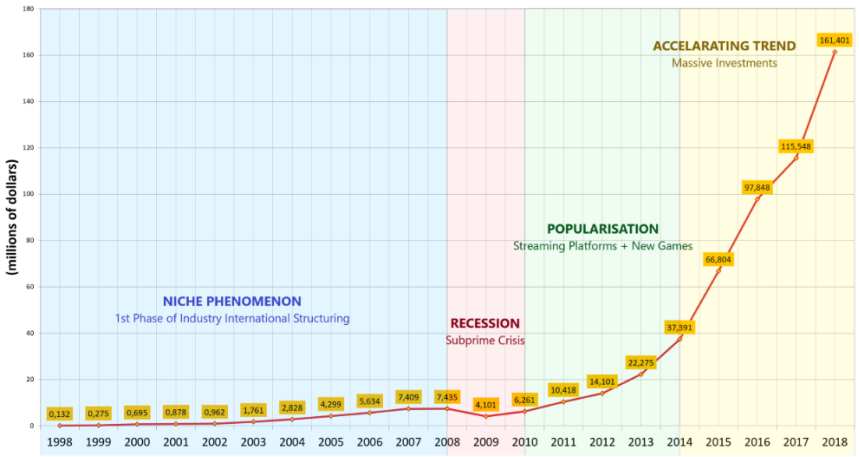

Figure 2: Total prize money distributed in Esports per year (1998-2018), data collected on esportsearnings.com (Besombes, 2019).

1.3.2 Categorizing types of gamers.

Simultaneously with the Esports industry, the gaming industry has grown. As has been mentioned, gaming is becoming part of mainstream entertainment. The traditional, stereotypical characteristics of a 'gamer' have been challenged by the broadening of different kinds of people that are enjoying games. Both the academic world and the game industry have attempted to get more information on how to correctly categorize gamers (Poels, 2012). This is relevant because it allows to design for a narrower part of different types of gamers.

Several studies aimed at classifying gamers based on characteristics of the gamers. In 2012, Poels tried to classify hardcore gamers. At first, he tried to make the distinction purely based on the time spent per person. He could not find a clear distinction between the casual and hardcore gamers based on time. Therefore, he looked at other factors: time spent on game related activities, money spent on gaming and challenge. In 2015, Kapalo et al. classified a hardcore gamer if they meet 5 out of 6 of the following requirements: (1) A 60 minute or longer game session. (2) Two hours of gaming per day. (3) Three or more days per week. (4) 15 minutes of researching games. (5) Owned 20 games or more. (6) Purchased two titles within the last half year. Another study chooses to simply look at the definitions in order to classify gamers (Moirn et al., 2016). Moirn defines a casual gamer as someone who has a low average of gaming sessions and is sporadically playing games. He defines hardcore gamers as more devoted players who play several games more often. Based on these definitions he categorized gamers. Note that these definitions are not the widely accepted definitions of causal and hardcore gamers.

None of the studies mentioned above are validated and none of these mention explicitly why a particular parameter was used or how the parameter was designed. Research to date has not yet determined how to classify hardcore gamers.

1.3.3 Esports and socializing

Next to researching on how to classify gamers, various studies show that the prejudice of gamers not being social is not true. The players' social behaviour in the online world has many similarities with their social behaviour in the real world (Hallmann & Giel, 2018; Martončik, 2015).

Generally, Esports are being consumed by people watching live streams on platforms like Twitch and YouTube. Alongside to watching the event, consumers can interact with each other in chatrooms (Hamari & Sjöblom, 2017). There are several papers that studied the motives of Esports athletes. The most significant motives were '*having social contact*' alongside to '*having*

fun' (Demetrovics et al., 2011; Jansz & Martens, 2005; Martončik, 2015). This indicates that doing Esports can be a legitimate way to satisfy social needs (Demetrovics et al., 2011).

Next to the consumption of Esports on platforms like Twitch and YouTube, some gamers want to participate in Esports themselves. Therefore, a noticeable amount of Esports platforms arised the last decade. Some of them focus on the professional players and some of them aim at Esports for the non-professional gamers. In appendix B, these platforms are explored to serve as inspiration for the development of Esportsladder.

1.4 Goals and challenges of Esportsladder

With the provided background information in consideration, the next section is dedicated to give a clear overview of the goals and challenges of Esportsladder. These are defined by the research team of the University of Twente and will be taken into account when constructing research questions for this research. To illustrate the strategic logic behind Esportsladder, the business model canvas is provided in Appendix K – Business model canvas of Esportsladder, this business model is provided by the research team of Esportsladder.

As described before, Esports tournament platforms have emerged as powerful platforms, mainly marketed to the stereotypical hardcore gamer. Therefore, people who are not a hardcore gamer might not feel drawn to such platforms. For Esportsladder, the opposite is the goal. One objective of Esportsladder is to include all kinds of people, mainly students and people working in businesses. However, most likely not everybody in a company will show interest in Esports and not every student will show interest in Esports. Therefore, Esportsladder aims at including a wide variety of people and not only the 'stereotypical gamer'. Another goal of Esportsladder is to combine socializing- and tournament platform elements to facilitate an Esports platform that also makes it possible to network and socialize.

1.5 Research Questions

This thesis will examine to what extend people, with or without interest in gaming and Esports, interact with Esportsladder. Considering the existing literature, it looks like there arise opportunities in order to enthuse different kinds of people in the platform. It offers opportunities for Esportsladder to be more than *just* competitive gaming and might be in the interest of a wide variety of people. If somebody is not into Esports, he might be interested in spectating, traditional sports or gaming or the networking and socializing abilities of the platform. Those topics are all connected to Esportsladder and widens the aspects of Esportsladder. To research to what extend this is true, the following research questions have been constructed:

- ***To what extend can Esportsladder engage a wide variety of people with the platform?***
- ***Which potential features appeal to which types of gamers?***
- ***Is there a difference in how people perceive Esportsladder based on their gamer type?***

1.6 Remainder of this report

The remaining of this report proceeds as follows: The second chapter contains theoretical needed to for the different methods that are described in Chapter three. The fourth chapter presents the results of the research. Chapter five contains the conclusion and the discussion and chapter six deals with future work and recommendations.

2. Theoretical Background

This chapter presents the theoretical background that is used to build upon in researching the research questions of this thesis.

2.1 State of the art

Esportsladder will be a combination of an Esports platform and a socializing platform, therefore, multiple tournament platforms, some with and others without a ladder-style element and socializing platforms are analyzed to get an impressions of the State of the Art. For each platform, key characteristics are described. A documentation can be found in Appendix B – State of the Art. Tournament platforms are analyzed to get an idea of the essential functionalities. Also, socializing platforms are being analyzed to serve as an inspiration on the socializing segment of Esportsladder. This is vital because one objective of Esportsladder is to facilitate the opportunity to socialize.

As described before, most Esports platforms mainly focus on attracting the hardcore gamer. However, our target group might have non-gamers or casual gamers as well. Luckily, gaming is proven to be in the interest of the vast majority of people (Tausend, 2006). Almost everybody, in every age group, has played a game. Gamers can be found in all age groups and gender. This ranges from casual, mobile games like CandyCrush Saga to hardcore games like CounterStrike Global Offensive. However, not all gamers see themselves as a 'real' gamer or want to be associated with the term 'gamer' (Tausend, 2006). This might be challenging in developing Esportsladder.

In conclusion of analyzing these platforms, many socializing platforms have been observed to use gamification elements, either unintentional or intentional. Most platforms feel more engaging because of gamification techniques. Most Esports tournament platforms have a typical 'hardcore gamer look and feel'. All platforms are easy to navigate and feel intuitive. The look and feel keeps attracting the target group of those platforms: hardcore gamers. Some platforms use a ladder style competition element which is likely for Esportsladder to have as well.

To be able to design for Esportsladder, the analysis of the platforms will be taken into account. In addition to this analysis, the Octalysis Framework is used in order to be able to design for different users. The Octalysis Framework will be discussed in Chapter 3.

2.2 Construction of Type of Gamer scale

In order to research how to engage a wide variety of people, it would be helpful to be able to categorize different types of potential users. This would be helpful in determining specific features and design elements that would be in the interest of a specific type of user. According

to literature, these categorizations could be casual gamers and hardcore gamers. People who don't game are categorized as non-gamers.

Information on categorizing different types of gamers is limited. Various researchers used parameters like time and attitude in order to divide gamers in the categories casual and hardcore gamers (Poels, 2012). There is no rule of thumb on how to categorize gamers. Therefore it is decided to combine the two best perceived papers (Kapalo et al., 2015; Poels, 2012)into the Type of Gamer scale for this research. The choice was made to use a scale instead of a hard limit that consists out of six statements that are included in the survey. These statements can be found in Appendix M - Survey Questions.

2.3 Technology Acceptance Model (TAM)

With the Type of Gamer scale, it is possible to categorize people into the categories non-gamer, casual gamer or hardcore gamer. This is useful because we can make conclusions based on the difference in gamer type. Also, this scale can be used in a theoretical model as a construct. The Technology Acceptance Model (TAM) is used as a base. This model is widely researched and contains validated questionnaires. The goal of TAM is determining if people accept or reject new technologies. For this thesis, TAM is enhanced with research specific constructs. Namely, the Type of Gamer scale and Risks for onboarding.

Davis (1989), proposed TAM. He based his model on Fishbein and Azjen's (1980) Theory of Reasoned Action. Davis developed and validated the constructs. This resulted in TAM as can be seen in Figure 3. TAM is an *information systems theory* that models how potential users come to accept and utilize a (new) technology. Much literature about customers adopting new technologies has been derived from TAM. Modifications and uses of TAM ranges from the application of ERP system (Amoako-Gyampah & Salam, 2004) to mobile inventions (Kleijnen et al., 2004). These studies were either interested in adopting some sort of technology or assessing the usage itself.

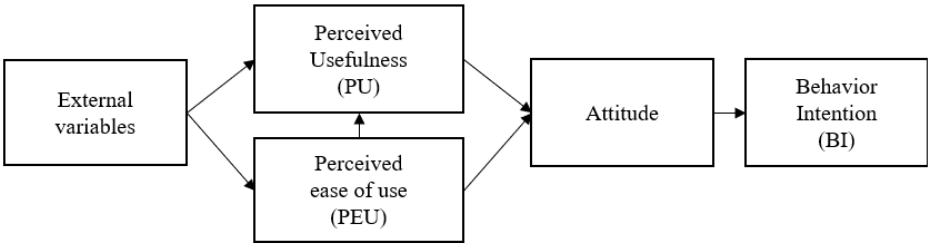

Figure 3: The Technology Acceptance Model (Davis, 1989)

According to Davis (1989), the constructs Perceived Usefulness (PU) and Perceived Ease of Use (PEU) are especially important in determining if people accept or reject new technologies. In this thesis, the constructs PU and Behavior Intention (BI) will be used as part of the theoretical

model. Other constructs known as External variables, Perceived Ease of Use and Attitude are not used in the modified model because the validated questionnaires for those constructs are not yet applicable to the current state of Esportsladder. The questionnaires would have to be adapted in such a way that they are no longer validated. Therefore, the choice was made to only use the constructs PU and BI that are based on TAM.

2.4 Research Model

With the validated constructs PU and BI in combination with the constructs specially adapted to this research called TOG and RFO the research model is created in order to answer the main research question of this thesis: ***To what extend can Esportsladder engage a wide variety of people with the platform?*** By determining the Perceived Usefulness and the Intention to Use per gamer type, a prediction can be made. This chapter explains how every construct is built up and shows the hypotheses per construct.

Based on TAM, the literature review and the exploratory research methods, a modified research model is shown in Figure 4: Theoretical Research Model. The causal relationships are represented by the arrows. This model is designed to fit the characteristics and the current state of Esportsladder.

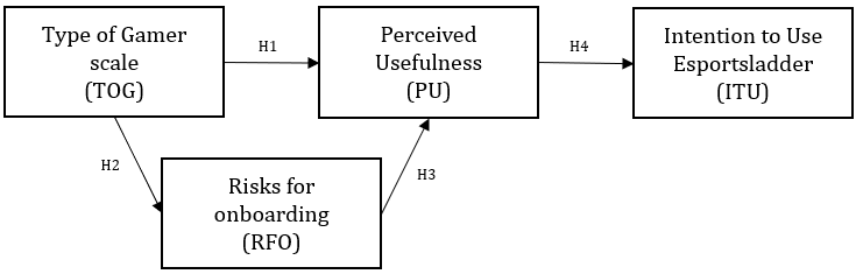

Figure 4: Theoretical Research Model

The four constructs used in the theoretical research model are based on literary sources. Each construct is modified to fit the description of Esportsladder. The sources used for assembling the constructs are listed in Table 1.

Construct	**Source**
Type of gamer scale	(Kapalo et al., 2015; Poels, 2012)
Risks for onboarding	Determined after mimicking an Esportsladder competition see section 3.3.1.
Perceived Usefulness	(Amoako-Gyampah & Salam, 2004; Davis, 1989; Gribbins, 2007; Mou et al., 2017; Ramayah & Ignatius, 2005)
Intention to Use Esportsladder	(Amoako-Gyampah & Salam, 2004; Ramayah & Ignatius, 2005)

Table 1: Sources for each construct of the research model

Every construct will be explained and described how it is established. Also, the hypotheses will be described in the next section.

2.4.1 Type of gamer scale (TOG)

This construct is based on a literature review about categorizing types of gamers as can be seen in section 1.3.2. As said before, in current literature, it is difficult to isolate the rule of thumb to categorize gamers. Therefore, the choice is made to combine the most well perceived studies about categorizing gamers. How this is done is described in section 2.2.

The hypothesis based on this construct are:

> *H1: There is a positive correlation with **Type of Gamer** and **Perceived Usefulness.***
> *H1a: Non-gamers will score lower than gamers on **Perceived Usefulness.***

2.4.2 Risks for Onboarding (RFO)

This construct is based on the organization of an Esportsladder competition as an exploratory research method. While organizing this competition, the researcher did not manage to get enough participants, and the ones who did agree to participate were not as invested as needed to get test the initial test items. However, the researcher was able to identify future Risks for Onboarding. It displayed the future risks that could occur while organizing a competition on the foreseen platform. In section 3.3.1, the risks are further elaborated on.

The hypothesis based on this construct is:

> *H2: There is a negative correlation of **Type of Gamer** on the **Risks for Onboarding**.*

2.4.3 Perceived Usefulness

In line with TAM (Davis, 1989), the construct Perceived Usefulness is redefined for this research as "the degree to which an individual believes that using the platform will contribute to reaching a particular objective". It is predicted that increased perceived usefulness is negatively associated with risks for onboarding. The questions for this construct are based on validated questionnaires and mildly adjusted to fit Esportsladder.

The hypothesis based on this construct is:

> *H3: There is a negative correlation of **Risks for Onboarding** on the **Perceived Usefulness**.*

2.4.4 Intention to use Esportsladder

Also in line with TAM (Davis, 1989), the construct Behavior Intention to Use is redefined to Intention to use Esportsladder. It is predicted that an increased PU is positively associated with

Intention to Use Esportsladder. The questions for this construct are based on validated questionnaires and mildly adjusted to fit Esportsladder.

The hypothesis based on this construct is:

> *H4: The **Perceived Usefulness** correlates with the **Intention to Use** Esportsladder.*

2.4.5 Additional hypotheses

As suggested in research, casual game players often don't perceive themselves as actual gamers (Cheng & Amsterdam, 2011; Poels, 2012). In the survey, the question 'which term describes you best?' is added. The three possible answers are: non-gamer, casual gamer, and hardcore gamer. Later in the survey, their actual score on the TOG-scale is calculated.

> *H5: There is a difference in how people estimate themselves in their **Type of Gamer** and their actual **Type of Gamer**.*
> *H5a: Not all casual gamers perceive themselves as actual gamers.*
> *H5b: Not all hardcore gamers perceive themselves as hardcore gamers.*

In the survey, the choice was made to provide two different versions of introductions. Respondents were not aware of this. One introduction explaining in detail the foreseen goals of Esportsladder including information about socializing and networking for businesses and students. This introduction also included some examples of future proceedings because of using Esportsladder. The other introduction was a short basic text about Esportsladder. The two versions alternated randomly. The two introductions are displayed in Appendix L.

> *H6: There is a positive influence of the **Explanation Provided** on the **Perceived Usefulness**. I.E.: when an explanation about the uses and advantages is provided, people will score higher on the perceived usefulness*

3. Methodology

Prior the construction of the research model in Chapter 2, methods were used in the process of this research. Most of these methods are less academic in nature, however, they added in understanding some of the problems encountered in the process of answering research questions.

Esportsladder combines a particular blend of concepts: socializing and networking in combination with Esports and gaming. This combination has not been researched thoroughly in the past. Therefore, exploratory research methods have been used to gain familiarity about this combination of concepts. This does not lead to one conclusive result. However, it helps in understanding potential problems related with the mix of concepts.

Five exploratory research methods were used. These exploratory methods are respectively, an Auto-ethnographic exploration, orienting interviews, personas, the Octalysis framework and a field trial of an Esportsladder competition. Furthermore, data for this research was collected using a survey which is analyzed to reject or accept the hypotheses describes in section 2.4.

3.1 Orientation

Before starting any kind of (scientific) research, a few orienting research methods have been conducted. The researcher felt it necessary to record how she currently views the subject of Esports and gaming because it might unconsciously influence the research. Therefore, an auto-ethnographic exploration, some orienting interviews and personas are conducted.

3.1.1 Auto-ethnographic exploration

At the beginning of this research, I first looked at my own experience as a gamer because this influenced my opinion about Esports and gaming. I believe in the positive effects of gaming. However, I also experienced that there are negative ones. Gaming can be intimidating. It can be addicting. In Appendix A – Auto Ethnographic Exploration I share some of my gaming experiences.

A recognized auto-ethnographer (Ellis et al., 2011), defines this method as:

> *"An approach to research and writing that seeks to describe and systematically analyze personal experience in order to understand cultural experience. … A researcher uses tenets of autobiography and ethnography to do and write autoethnography. Thus, as a method, autoethnography is both* ***process*** *and* ***product****."*

In conclusion, it is not always fun or relaxing to play games. Participating in a game with a high-entry level like Counterstrike without enough experience in the game can be intimidating and

humiliating. Also, it can result in feelings of regret. I can imagine that this is even more true for a non-gamer. However, when getting a kick-start to the game by friends, it was a lot of fun and actually enjoyable. Playing Zelda was addicting to a point that the game gets prioritized above other important activities. It is important to keep in mind these negative sides of gaming when developing Esportsladder.

3.1.2 Orienting interviews

To consider other people's viewpoints, two orienting interviews are conducted. The transcription of both interviews can be found in Appendix C – Transcription of Exploratory Interviews.

To get a better idea of socializing events, an interview is conducted with the organizer of tennis events for companies. To get a better idea of the perspective from a company's point of view, an interview is conducted with the Staff leader of an organization. She organizes all kinds of events to engage as much employees as possible.

3.1.3 Personas

After conducting an auto-ethnographic exploration and two orienting interviews, the researcher has a better understanding of how people perceive the concept of Esportsladder as well as what potential users could be like. In order to define the hypothetical users, the persona method is used. To create reliable and realistic representations of the main target group segments and potential users, personas are created. This can help in creating a good user experience. The personas method can be used to define typical, archetypes of users. Personas are not real users; however, the personas are based on real data. The principle is to design a product, in this case the platform, adapted to different types of people (Brangier & Bornet, 2011).

3.2 Extracting features

After defining the hypothetical user segments with persona's, and an understanding of these potential users is present, designing for them is the next step. The Octalysis Framework helps in segmenting different user groups and design for them separately. This can be valuable in the design process for Esportsladder because a wide target group has to be represented in the design of Esportsladder. The goal here is to design for different target group segments and think of appealing features for different user groups. As read in literature and processed in the personas, these target group segments are divided by gaming behavior: non-gamers, casual gamers and hardcore gamers.

3.2.1 The Octalysis Framework

The Octalysis Framework is one of the most well-known tools for assessing gamification to motivate and engage people in a platform or product. The Octalysis Framework is a human-

centered design framework that defines the drivers of people's motivation (Chou, 2014). Chou states that this framework can be used for every product, platform, or idea. According to Chou, everything you do in life is based on one or more of the 8 Core Drives, when you do something without any core drive, you have no motivation to do it. The core drives are described in more detail in Appendix E – Octalysis Framework, the 8 core drives.

The main goal of using this framework is to design for different users and understand their differences. An important step in using the Octalysis Framework is categorizing users. In line with the personas, these are categorized as follows: 1) non-gamers, 2) casual gamers and 3) hardcore gamers. This is needed because the main purpose of the Octalysis Framework is to map out different users to different phases in a 'player's journey'. The player's journey is the journey every user of a product or service goes through. According to Chou, it goes as follows. The first phase is the discovery phase. This is the first encounter the user has with the product. The second phase is the onboarding phase, in this phase the users decides if he wants to keep using the product or not. This is the perfect phase to train the user to get to know the product. The third phase is the scaffolding phase. As the users makes it to this phase, he is confident in using the system and wants to use it. The last phase is the endgame, this is the last phase and is defined as the remainder of the user using the product.

3.3 First field trial

Turning now to the fourth method used in this research. Namely, the first field trial for Esportsladder. A field trial is selected as a method because testing '*in the wild*' can be valuable when real-life disturbances are important for the design, which is true for Esportsladder. When Esportsladder is up and running, a lot of real-life disturbances will occur so it can be valuable to detect and minimize them with field testing.

3.3.1 Mimicking potential features extracted from the Octalysis Framework

The implementation of The Octalysis Framework and the orienting research methods described before, made for a better understanding of Esportsladder and its potential users. The main potential features that came from doing these methods are now tested in a field trial. An Esportsladder competition was organized to mimic the features that came out of using the Octalysis Framework.

The initial goal of mimicking an Esportsladder competition was to test different functionalities designed for Esportsladder. These functionalities are extracted from using The Octalysis Framework. The initial test items are listed below in Table 2.

Test features	Explanation
Spectator functionality	The possibility to watch live games of other players and spectate, comment, and connect with other spectators. This also makes it possible to enjoy the ladder competition without having to join a competition.
Casual game functionality	The possibility to choose a casual game to join the competition, in this case, Blobby Volley.
Hardcore game functionality	The possibility to choose a hardcore game to join the competition. In this case, FIFA.
Social feed with interactive features	Players can share highlights of their games, share the outcome, discuss games and comment on each other.
Physical ladder representation	A physical representation of the ladder in order to test if this will contribute with engaging players and motivating them towards joining and winning a competiton and go higher up on the ladder.
Community building	To engage people in the platform, community aspects are mimicked in Discord. People can send messages to each other, react on match outcomes, like comments.

Table 2: Initial test items of mimicking an Esportsladder competition

To be able to mimic an Esportsladder competition in a field trial, a representation of the Esportsladder platform was needed. At the time of testing, the original platform was still in development. Therefore, the choice was made to use Discord as a substitute. Discord is a free app to share text, video and audio. Especially gamers like to use it. Discord made it possible to easily mimic the new features early in the process. Some screenshots of the Discord server can be found in Appendix G – Impression of Discord server.

3.3.2 First field trial design

The first field trial is prepared well. With a Discord server, two physical ladders, flyers for promotion and a physical location on Campus, the researcher was ready to do the first field trial. For this field trial, 30 users are recruited to interact with the system over a period of time. They were asked to join either one of two competitions and 'just enjoy', spectating was also possible. See Appendixes J, I, H and G for an impression of this field trial. These Appendixes have flyers, pictures from participants and the tangible ladders.

3.4 Survey

After the completion of organizing the competition, a wide understanding of Esportsladder was present. However, there still was lack of data to give concrete suggestions to the research team of University of Twente. Therefore, it was decided that a survey would be a legitimate option to gather data. This section will describe how this survey is build up.

A self-administered survey was used to obtain responses. The survey is established to conduct experimental research for Esportsladder. At the time of doing this survey, Esportsladder is still

in the developing phase, therefore this kind of research might add value in predicting fruitful features and segmenting the target group. The following sections discuss the platform under study, the considerations related to the measuring instrument and the sampling procedure.

While constructing the survey, the aim was to get results as effective as possible with minimal bias in results. This is done by partly using validated questionnaires and constructing other questions as good as possible to only measure what is needed to reject or accept the hypothesis.

3.4.1 Research Design

In order to test H6, two different introductions were added in the survey in order to do A/B testing. An extensive introduction to inform participants about the potential of Esportsladder, and a basic short introduction. The different versions of surveys were distributed approximately fifty-fifty in order to measure if it would make a difference how the topic was introduced. These introductions can be read in Appendix L.

The researcher attempted to explore the hypotheses discussed in section 2.4 through a survey. The participants are potential users of Esportsladder. Data is collected using the survey software Qualtrics XM. Analyses were performed with SPSS 27 for Windows. The survey was distributed to the personal and professional network of the researcher as well as the networks of the supervisors. Some people in these networks distributed the survey link to their own network. This made for a widely distributed survey.

3.4.2 Descriptive Analysis

A total of 152 individuals responded to the survey. 117 completed the survey (117/152 = 76.9%). Table 3, Table 4 and Table 5 display the demographics of the sample that fully completed the survey. The survey is distributed in Dutch.

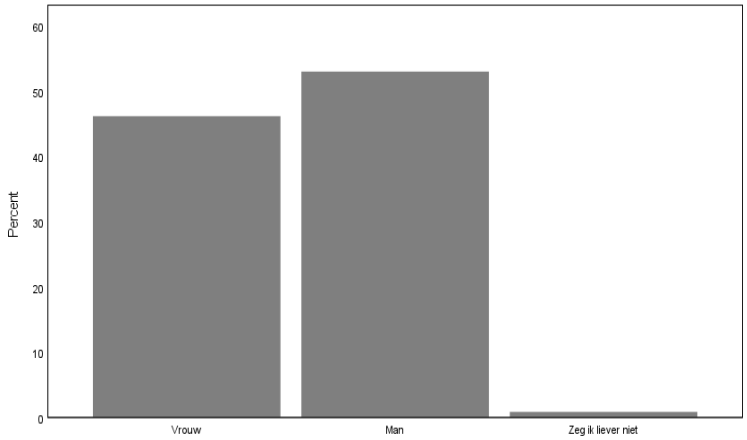

Table 3: Sex of the respondents (N=117)

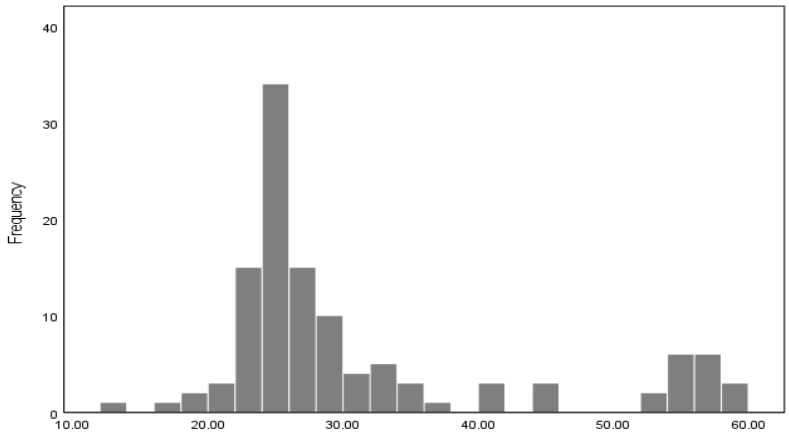

Table 4: Age of the respondents (N=117)

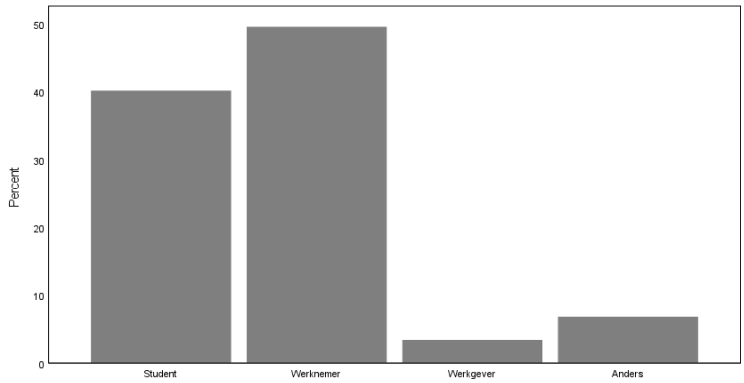

Table 5: Occupation of the respondents (N=117)

3.4.3 Reliability Analysis

Cronbach's α (alpha) is a measure of the reliability of psychometric tests of questionnaires (Cronbach, 1951). As a rule of thumb, below 0.70 is undesirable, 0.70 is acceptable and 0.80 or greater is preferred (Cortina, 1993, Hair et al., 2009). To give an indication of the reliability and internal consistency of the survey, Cronbach alpha is calculated for every set of questions. These sets of questions can be found in Appendix M - Survey Questions, each set is marked with a label with the corresponding names in Table 6.

Set of questions	**No. of items**	**Items deleted**	**Cronbach Alfa (a)**
Perceived Usefulness (PU)*	4	-	a = 0.832
Risks for Onboarding (RFO)*	6	-	a = 0.764
Spectatorship	7	-	a = 0.788
Spectator functionalities	5	-	a = 0.754
Feed	6	-	a = 0.823
Feed functionalities	7	-	a = 0.898
Casual Competition	5	-	a = 0.636
Type of Gamer scale (TOG)*	6	-	a = 0.842

*Table 6: Reliability analysis *Set of questions is used in theoretical model as a construct*

As can be seen in Table 6, all sets, except 'Casual Competition' have a Cronbach Alfa greater than 0.70 which implies the data is acceptable. The set 'casual competition' is not adapted for processing results in order to get the alfa higher. The alfa would not get higher if questions were deleted from the results so the decision is made to leave it like this. When drawing conclusions this low alfa will be taken into account. Perceived Usefulness and Type of gamer scale have a Cronbach Alfa greater than 0.80 which implies that the reliability is respectable. The reliability of these two constructs is most important for this research because they are used in the theoretical model as well.

4. Results

This chapter will display the results from all methods used. First, the results from the orientation methods are shortly elaborated on. Next, the results from the Octalysis Framework are shown and lastly, the results from the survey are interpret.

4.1 Orientation

This section will display the results from the auto-ethnographic exploration, the interviews and the personas.

The auto-ethnographic exploration helped in understanding my own starting point in how I perceive gaming and Esports. Summarizing, I acknowledge the potential of gaming and Esports. I am interested myself, however, I also recon that there are negative sides to gaming like addiction and intimidation. My auto-ethnographic exploration can be read in Appendix A – Auto Ethnographic Exploration.

With the auto-ethnographic exploration in mind, interviews were conducted. The first interview, with the organizer of tennis events for companies said that the events he organizes are popular and work very well for socializing amongst employees, a relaxed atmosphere is always present. He was a gamer himself and had his doubts about Esportsladder. However, he acknowledges that Esports is on the rise, he saw potential in incorporating casual games in the platform. The second interview was with the staff leader of an organization who is responsible for a good atmosphere amongst employees. She acknowledges that it is more challenging in times of COVID-19 and sees great potential in causal gaming. She explained that she tried to organize an online event with the game Among Us. Not many people participated, only people who are familiar with the game participated. She sees potential and would use it at her organization.

The personas illustrate different archetypes of users. The personas are based on the different types of potential users of the platform. Every potential user can fall under one of three categories: (1) hardcore gamer, (2) casual gamer and (3) non-gamer. Therefore, three personas are created for those categories. The personas can be found in Appendix D – Personas.

4.2 Extracting features

After the orienting methods, the next method was using the Octalysis Framework to extract potential features for Esportsladder. The results from using that framework are shown below.

4.2.1 The Octalysis Framework

As described before, the Octalysis framework is a guide for segmenting different users and implementing design elements for every user category. Appendix F – Process of using The

Octalysis Framework shows the documentation on the process that came from using Chou's Octalysis Framework. The main ideas that came from using this framework are:

(1) implementing a spectator functionality, targeting the non-gamers to engage in Esportsladder.
(2) implement a casual gaming functionality to not 'scare away' the casual gamers and non-gamers.
(3) implementing a social feed for connecting every user. This feed needs to be engaging for all categories.

These ideas were tested in the field trial of an Esportsladder competition and after that they were processed in the survey. The results from this will be displayed in the next section.

4.3 First field trial

After the orienting methods and the Octalysis Framework, the first field trial was held. As described before, an Esportsladder competition was mimicked with real participants who could join a casual or hardcore competition, joining as a spectator was also possible.

4.3.1 Mimicking an Esportsladder competition

Organizing an Esportsladder competition appeared to be more complicated than expected. A lot of risks for onboarding occurred. Many non- and casual gamers were worried to participate in a competition with strangers or to play games they never played before. Some said to have no time to play 'silly' games. The initial test items from Table 2 have not been examined due to lack of data. However, important risks to take into account have emerged by mimicking an Esportsladder competition. These risks are summarized in table 7. During organizing the competition, the researcher kept track of these risks and used a naturalistic observation method. Tally sampling is used to keep track of the different problems that occurred. The results can be found in Table 7.

	Non-gamer (N = 10)	Casual gamer (N = 6)	Hardcore gamer (N = 6)
Struggling with platform (Discord)	III	II	
Concerned about a game that is never played before	IIII	II	I
Concerned to play games in general	IIIII		
Concerned about playing against strangers	IIIIII	II	
Not excited about the competition in general	IIII	III	II
Concerned about time investment	III	IIII	III

Table 7: Risks for onboarding, measured by tally sampling, every I stands for a time a potential participant expressed a certain concern. One person may indicate more than one concerns.

Note that at the time of tally sampling, the TOG-scale (see page 21) to categorize gamers, was not developed yet. The division in different types of gamers is done by personal judgement of the researcher. This was possible because the researcher knew all participants personally and knew about their gaming behavior. This could contain errors of personal judgment.

In conclusion, non-gamers encountered most risks, they struggled with using the platform or were scared to play games in general. A lot of them mentioned that they were not interested in gaming against strangers. Some participants mentioned that they did not want to spent time on this. The organization of this competition could not research the proposed features, however, it discovered valuable information for the onboarding phase of Esportsladder. This information was further distributed in the survey.

4.4 Survey

The findings from the first field trial, the orienting methods and the Octalysis Framework are combined in a survey. From these methods came potential features and constructs. These are processed in a survey to test how these features would work out for different types of people, gamers. This section shares the results of that survey. The survey questions can be found in Appendix M - Survey Questions.

4.4.1 Correlation Analysis

The hypotheses from chapter 2 are stated below and will be rejected or accepted in this section. These hypotheses are solely focused on the research model and the correlations between the constructs. These hypotheses on itself can help with answering the research questions.

H1: There is a positive correlation with ***Type of Gamer*** *and* ***Perceived Usefulness.***
H1a: Non-gamers will score lower than gamers on ***Perceived Usefulness.***

H2: There is a negative correlation of ***Type of Gamer*** *on the* ***Risks for Onboarding****.*

*H3: There is a negative correlation of **Risks for Onboarding** on the **Perceived Usefulness**.*

*H4: The **Perceived Usefulness** correlates with the **Intention to Use** Esportsladder.*

*H5: There is a difference in how people estimate themselves in their **Type of Gamer** and their actual **Type of Gamer**.*
H5a: Not all casual gamers perceive themselves as actual gamers.
H5b: Not all hardcore gamers perceive themselves as hardcore gamers.

*H6 [rejected]: There is a positive influence of the **Explanation Provided** on the **Perceived Usefulness**. I.E.: when an explanation about the uses and advantages is provided, people will score higher on the perceived usefulness*

[H6] As described before, the survey had two versions to do A/B testing with two different introductions. 53 respondents filled in the survey with the short introduction and 64 respondents filled in the survey with the extensive introduction about Esportsladder. It was predicted that this would have a significant influence on the data and that the data had to be discussed separately. However, when looking at the P values of all sets of questions, there are no significant relations found. $P > 0.05$ for all sets of questions as shown in Table 8. Therefore, H6 is rejected. There is no significance relation between the type of explanation provided and the survey questions. Therefore, it is decided to treat the rest of the results as a whole and not split up the data for the rest of the analysis. However, it is interesting to note that there was no significant difference in the different introductions. This may indicate that it makes little difference in how Esportsladder is presented. It is more important to make people perceive it more useful.

	Sig.
PU	.660
SpectFunc	.188
RFO	.905
TOG	.550
ITU	.616
Feed	.251
FeedFunc	.948
CasualComp	.785
Spect	.453

Table 8: P-values from all sets of questions compared to Type of Introduction

[H1a, H2, H3ab, H4] In order to be decide if we are going to accept or reject H1a, H2, H3ab, H4 and H5, correlations between PU, RFO, TOG and ITU are calculated with the Pearson correlation coefficient. The Pearson correlation coefficient expresses the strength of a linear relationship

between two variables in a number between -1 and 1. (Freedman et al., 2007). Mukaka (2012) provided a rule of thumb for interpreting the Pearson correlation coefficient: coefficients between −0.5 and −0.3 or between 0.3 and 0.5 are seen as a low correlation. Coefficients between −0.7 and −0.5 or between 0.5 and 0.7 are seen as a moderate correlation. Looking at the Pearson coefficients of the model analysis (see Figure 5), H1a, H2, H3ab and H4 were found to be accepted when interpreting the Pearson correlation coefficients. The correlation between RFO and ITU is a moderate correlation of -0.555, which is worth noticing because initially it was not predicted that there would be a significant correlation between these two constructs. In hindsight this makes sense, if someone scores high on Risks for Onboarding he might score low on the intention to use Esportsladder because he sees a lot of Risks.

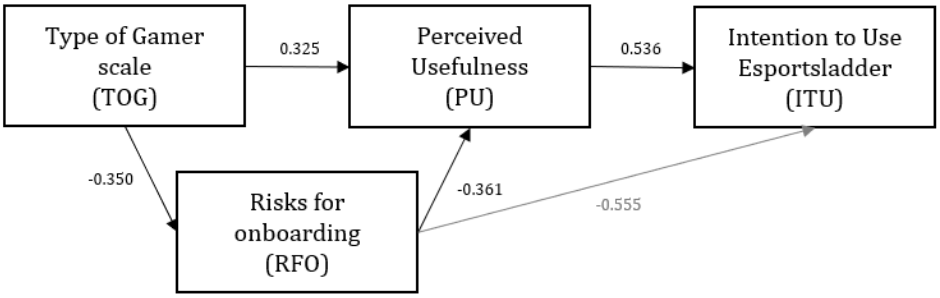

Figure 5: Results of the model analysis

Correlations

		TOG_scale	Risk_meanscore	PU_meanscore	Intention to use
TOG_scale	Pearson Correlation	--			
	N	91			
Risk_meanscore	Pearson Correlation	-.350**	--		
	Sig. (2-tailed)	.001			
	N	91	117		
PU_meanscore	Pearson Correlation	.325**	-.361**	--	
	Sig. (2-tailed)	.002	.000		
	N	91	117	117	
Intention to use	Pearson Correlation	.441**	-.555**	.536**	--
	Sig. (2-tailed)	.000	.000	.000	
	N	91	117	117	117

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

Table 9: Correlations between constructs from theoretical model.

The main takeaway from the correlation analysis results is that the Type of Gamer lightly correlates with all constructs. This might indicate that there is a difference in how people perceive Esportsladder based on their gaming category.

When calculating R^2, which indicates how much of the variance in the dependent variable is explained by the explanatory variables, all correlations except 0.555^2, are < 0.3 which indicates

a very low correlation (Zikmund & G., 2000). When using this as a rule of thumb, H1a, 2abc, H3ab, H4 and H5 were found to be rejected. The values of R^2 are calculated in Table 10.

	R	R^2
TOG-RFO	-0.350	0.123
TOG-PU	0.325	0.106
RFO-PU	-0.361	0.130
RFO-ITU	-0.555	0.308
PU-ITU	0.536	0.287

Table 10: Values of R^2 per relation

4.4.2 Difference in self estimated TOG and actual TOG

[H5] Next to the correlation analysis, the results show some information about the TOG. In the survey, participants were asked to choose one of three categories: non-gamer, casual gamer and hardcore gamer. This was one of the first questions without too much context. At the end of the survey they were asked to rate six statements (the TOG scale). The self-estimated TOG percentages are compared with the actual TOG scale. This is calculated as follows. Percentages are calculated. For example, 56 out of 117 respondents estimated themselves as non-gamers. However, only 26 out of 117 respondents answered 'no' to the question 'do you ever game?'. For this calculation, the assumption is made that you qualify as a casual gamer if your TOG-scale is between 1 and 3.49 and a hardcore gamer if your TOG-scale is ≥ 3.5. Within these guidelines, H5, H5a and H5b were found to be accepted.

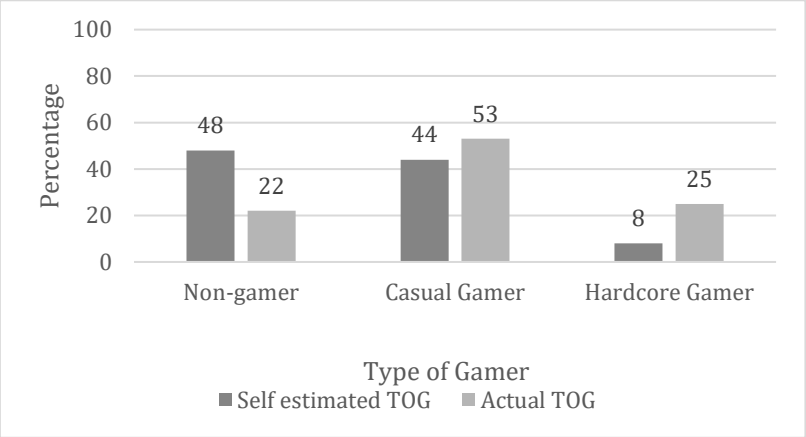

Table 11: Comparison between self-estimated TOG and actual TOG

4.4.3 Comparison of features by TOG

Another interesting finding is the comparison of how different Types of Gamers perceive different potential features of Esportsladder. This is summarized in Table 12. Interpreting, non-gamers would rather spectate than game for themselves. This implies that developing a spectator functionality could improve Esportsladder by providing an active role in the platform for non-gamers. Spectating characteristics (SPECT) would be more appealing to hardcore

gamers then non-gamers and casual gamers. This makes sense because hardcore gamers often are familiar with spectating already. Many games offer a spectate functionality which automatically is used when, for example, a player dies in game. The player can watch his teammates automatically. The same can be said about the spectator functionalities, to a lesser extend (SPECTFUNC). The feed as a whole is best perceived by hardcore gamers, however, the difference is small. The feed functionalities (FEEDFUNC) are perceived low for all groups. Casual gaming competitions (CASUALCOMP) are perceived considerably better by non-gamers and causal gamers.

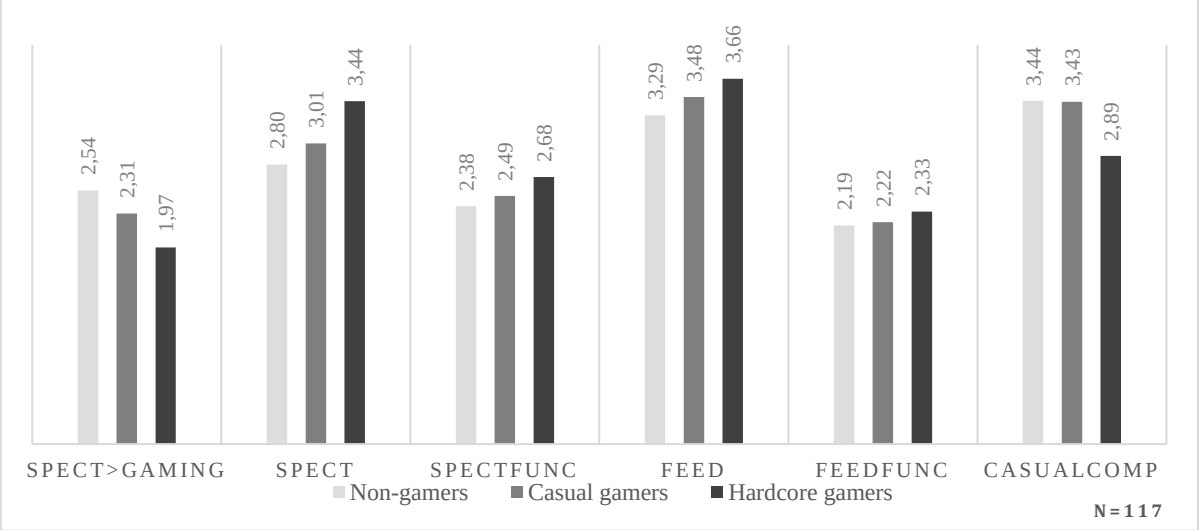

Table 12: Comparison of different possible features of Esportsladder with different TOG

4.4.4 RFO, PU and ITU compared by TOG

In line with TAM, it is assumed that Intention to Use can predict actual usage, Table 13 displays that the Hardcore gamer is most likely to use Esportsladder than, respectively, Causal Gamers and Non-gamers. Also, the PU is higher correspondingly with the gamer types. The risks for onboarding are the lowest for hardcore gamers and the highest for non-gamers.

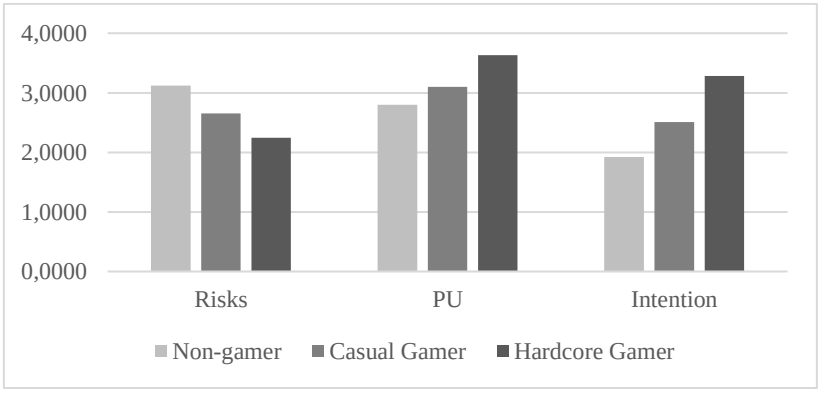

Table 13: Means of RFO, PU and ITU compared by TOG

4.4.5 Research Questions

After rejecting and accepting the hypotheses these are good indicators for answering the RQ's. This section will aim at answering the RQ's proposed in the introduction of this thesis.

- ***To what extend can Esportsladder engage a wide variety of people with the platform?***

This question can only be answered partially. It seems like there lays potential in the use of a spectator functionality in order to get non-gamers and casual gamers engaged in the platform. Also, a casual gaming competition could help in including non- and casual gamers. However, it is not researched yet how this would work out when implemented into a real competition.

Furthermore, a modified theoretical model based on TAM researches the impact of several constructs on the Intention to Use Esportsladder. The results of this research suggest that Type of Gamer, Perceived Usefulness and Risks for Onboarding affects the intention to use Esportsladder. This can be taken into account developing and promoting the platform in the future. It is predicted that hardcore gamers are the easiest to engage with the platform and non-gamers the hardest.

It is shown that the Intention to Use is highest for hardcore gamers and lowest for non-gamers. This indicates that hardcore gamers will be easier to onboard then non- and casual gamers. This is something that can be taken into account as well. A way to engage more non- and casual gamers might be the spectating functionality. It shows that non- and casual gamers prefer to watch games compared to game themselves.

- ***Which potential features appeal to which types of gamers?***

This question only can be answered with a prediction. Interpreting the results from the survey as described before, non-gamers would be drawn to a spectator functionality when they have the choice to game or spectate. Surprisingly the spectator functionality was most popular with hardcore gamers. This is worth noticing because it originally was designed to onboard non-gamers. The social feed is best perceived by hardcore gamers as well. Casual gaming competitions are most appealing to non-gamers and causal gamers.

- ***Is there a difference in how people perceive Esportsladder based on their gamer type?***

To answer this question, the Type of Gamer scale is essential. It is shown in the results that there is significant correlation between gamer types and other constructs. Therefore, it might be an important predicter in the actual use of Esportsladder.

5. Discussion and Conclusion

The main goal of this research was to determine to what extend can Esportsladder engage a wide variety of people with the platform. The first step in being able to answer this question was to categorize gamers into categories. Previous studies used different criteria to categorize gamers into one of two categories: casual or hardcore gamers. These studies observed inconsistent results on how to categorize gamers. It is important to further investigate how to categorize this because it allows designing for particular characteristics of different types of gamers. This might be important for research and developers. Due to the research conducted in this thesis, we made progress in categorizing gamers. The Type of Gamer scale is constructed, and the scale of 6-statements showed high reliability. The scale can be found in Appendix M - Survey Questions, it is part of the survey that has been conducted. As well as the progress made in categorizing gamers, it also allowed for categorizing participants in this study into one of three categories: non-gamer, casual gamer and hardcore gamer. This made it possible to test different features among these groups with the survey. This can be useful for Esportsladder because it allows for personalizing the platform according to the Type of User.

A few interesting findings are that the Risks for Onboarding are lowest for hardcore gamers and highest for non-gamers. Perceived Usefulness is lowest for non-gamers and highest for hardcore gamers. Intention to Use is lowest for non-gamers and highest for hardcore gamers. This indicates that it is important to further research how to onboard non-gamers and how to get the perceived usefulness of non-gamers higher. Maybe there are ways to do that. For example, spreading interesting articles about gaming and the positive effects gaming can have. This might lower the border to start gaming and join Esportsladder.

Because of aiming to include non-gamers as well, a third category was researched. Therefore, we got insights in how non-gamers perceive the world of gaming and Esports. This research reveals design opportunities for Esportsladder. Namely, a casual game competition could attract all types of gamers and most importantly, non-gamers. Also, a spectator functionality could be interesting for all types of gamers. Overall, hardcore gamers are more familiar with spectating Esports however, we see great potential in using the spectating functionality to introduce non- and casual gamers into the world of gaming.

In order to test different features among different types of gamers and non-gamers, an Esportsladder-style competition was organized to mimic future features of Esportsladder. Contrary to expectations, this research method did not study the initial hypothesis of certain features being especially useful for, for example, non-gamers. Instead, it showed potential risks for onboarding. Risks that were initially not thought of but are very important to take into account when developing Esportsladder. The most dominant risks were that people indicated

that they were not comfortable to play against someone they don't know or about the fact that they did not know how to play games. It worried them and therefore they did not join the competition or joined but never took the initiative to play against someone or be active on the platform.

Next to the Type of Gamer scale on its own being a viable asset, it is also used as a construct in the research model. The model was used as a tool for determining the correlations between PU, RFO, TOG and the ITU. All these constructs lightly correlate with each other which indicates that, overall, the Type of gamer is an important factor in determining the Intention to Use Esportsladder. It also shows that the Type of Gamer, the Perceived Usefulness, the Risks for Onboarding and the Intention to Use are important predictors in the actual use of Esportsladder. This model might be useful to use in the future in predicting the actual use. The strongest correlation lays between Risks for Onboarding and Intention to Use. Though, no correlation was predicted. It is a negative correlation of -0.555 and therefore Risks for Onboarding might be the biggest predictor in Intention to Use. It might be interesting to do further research on how to lower these Risks in order to get more people to use Esportsladder.

5.1 Practical Implications

The research model is designed for the current state of Esportsladder. Some traditional constructs of TAM, perform best when the topic of research is ready for real users. For example, Perceived Ease of Use cannot be measured for Esportsladder as it requires participants using the system or a hi-fi prototype of the system. This was not viable to research, yet.

Another minor issue concerning the survey is that back translation is not achieved while constructing the survey. The validated questionnaires that are used are adapted and translated by the personal insights of the researcher. Therefore, minor translation issues could occur.

5.2 Study Limitations

This study only sampled people within the network of the researcher. Surveying more businesses and students who have shown interest in Esportsladder, may lead to more generalized data fitted to the target group. Also, the modified model should be validated and tested for reliability with different potential user groups. The TOG-scale contains assumptions made by the researcher and might contain personal bias.

5.3 Conclusion

The Type of Gamer scale might be useful in future research to categorize types of gamers. Looking at the reliability it might be a good base for categorizing gamers into the casual or hardcore category. However, the scale has yet to be validated and it might need back translation. The statements used for the Type of Gamer scale are also listed below.

Type of Gamer scale statements:

(1) I make time to play games. (2) While gaming, I am concentrated. (3) I spent time on online community gaming forums. (4) I get frustrated while gaming. (5) Gaming is a big part of my life. (6) I spend money on games.

5.4 Future Work and Recommendations

Within TAM (Davis, 1989), Intention to Use is widely considered to be a correct predictor of Actual Usage. However, some studies found that actual Usage does not always significantly correlate to Intention to Use (Straub et al., 1995; Szajna, 1996; Yousafzai et al., 2014). It would be valuable for Esportsladder to conduct new research when the platform is complete and see if Intention to Use correlates with Actual Usage of the system. This would also support TAM and provides a way to predict actual usage of Esportsladder and other comparable systems.

Further studies should be carried to validate the Type of Gamer scale. Solely, the scale would be a rewarding area for future work as it might help in characterizing and determining different types of gamers.

At time of researching, Esportsladder is still in development. Therefore, these constructs were complicated to accurately measure. A further study could use the original model of TAM to predict Intention to Use and Actual Behavior more accurately with the constructs Perceived ease of use and Attitude towards the system.

Another interesting field of research might be the change in gamer type and how this influences Esportsladder. For example, what if someone was a non-gamer but starts to enjoy gaming? Then a shift takes place, and the platform might need to adapt on that.

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Appendix A – Auto Ethnographic Exploration

“I gamed my whole life but for the sake of this report, I will only focus on my gaming experiences while being an adult because that is the target group we want to reach for this project. I want to talk about two gaming experiences that live in my head vividly. Both are contradicting because the experiences are both great and, at the same time had a negative influence.

Zelda Breath of the Wild

I can talk hours about how amazing this open-world game is. The visuals, the engagement, the gameplay, and the mentoring of the game is amazing in my opinion. I was addicted to this game and played more than 10 hours a week for a month or so. I enjoyed myself so much and was so hyped about the game. However, what made it the worst experience was that it influenced other things in my life. I would rather game then meet with friends or work on school. Sometimes I forgot to eat. This was only for a short amount of time and when I finished the game, my ‘addiction’ was gone. However, I can see why and how it happens to people and how dangerous a gaming addiction can be. In the end I felt regret because I spend so much time on a video game.

Counter Strike Global offensive

Mainly because I started this graduation project, I became interested in games like CounterStrike. I was curious how welcoming the game is for ‘noobs’. Because I’m a beginner in shooters. I never played a shooter before, so I putted it to the test. I even did research about the game, played against bots in order to learn the controls and watched some clips on YouTube to learn the maps and basic strategies. I prepared well, I thought.

Nervously I started a competitive game against and with real people. They were pretty good at the game and immediately knew I was a beginner. They were not very nice and through voice-chat called me all kinds of things. I remember not daring to speak because then they would know that I am a girl and that would probably make it even worse.

Honestly this first match made me feel kind of bad. Later, I found some people that I know in real life. They gave me a proper introduction to the game and let me play with them. That was amazing and so rewarding. I really like the game now. Apparently, shooters are something I want to do more in the future. The game is really socializing as well.

So, the conclusion from my personal experience is that is not always fun or relaxing to play games. It can be intimidating, addicting, and humiliating. These feelings I would want to prevent from happening to future users of Esportsladder. When introducing non-gamers into gaming, they should have a joyful experience. They should not be scared off. I still believe in the power of gaming when approached appropriately. “

Appendix B – State of the Art

Socializing platforms

Gather

Keywords: gamification, meeting, socializing
Gather is a pixelated virtual space where users can walk around in a park or a room. Via video conversation users can engage to one another. Users must manually walk close to others to start the videocall. Calls can exist in parallel. Users even can build their own space or play games with each other.
www.gather.town

Hoopla

Keywords: motivation, company, gamification
Hoopla is a motivation platform for companies. They claim to enhance the existing culture in a company. The platform allows engagement and motivation along colleagues. It broadcast key company events and celebration events throughout a mobile or desktop app. They use gamification techniques to create a play and win environment for employees.
www.hoopla.net

Wonder

Keywords: virtual space, avatar, meeting, socialization
Wonder is a virtual space where people can meet and talk. Users can create their own adjustable room. Every user has their unique avatar which can be controlled by mouse. The avatars can be dragged into groups. When several avatars are close to each other, webcams will be visible, and audio will work. The main facilitator can send a message to anyone, then all conversations will be silenced. It works for up to 1000 people, with a maximum of 15 in one circle.
www.wonder.me

SpatialChat

Keywords: VR & AR, speech recognition
SpatialChat is a chatroom that supports VR and AR. It can translate speech in real time, which results into emotional analysis of the conversation. This unfolds via responsive scenes.
www.spatial.chat

FRAME

Keywords: VR, meeting, exhibition gallery
FRAME makes it possible to gather with your co-workers, students, or audience in an immersive online space. Users can view the room in their browser or via VR glasses. Users can 'walk around' and look at presentations, movies, or art. It feels like walking in a museum.
www.framevr.io

Esea

Keywords: Esports, matchmaking
Esea stands for E-Sports Entertainment Association League. "It is a third-party matchmaking service that uses the industry leading anti-cheat methods to protect matches." ESEA currently has PUGs (Pick-Up Group: refers to a group of players formed on an ad-hoc basis, usually to carry out a specific task.), scrims (scrimmage: a competitive game you play against other

competitive players or teams for practicing in unranked matches), ladders (form of tournament which can go on indefinitely.) and events. Esea focuses on competitive gaming.
www.play.esea.net

Go Gamers

Keywords: gaming, community
Go Gamers is an online gaming platform. Hosting tournaments across different groups of age in different game modes allowing the players to connect and compete. They claim to facilitate the biggest, most connected, most extensive, gaming experience for amateur gamers. Via this platform, gamers can find other gamers to form a 'clan' and even become friends. Gamers can discuss about the game or make regular conversation on the forums. They offer tournaments, prizes, and news.
www.gogamers.me

Skibre

Keywords: Esports, casual gaming, socialize
Skibre is an Esports platform for mobile games. The aim of this platform is for mobile gamers to be recognized as pro gamers. This platform is a social and mobile-based competitive multiplayer mobile platform for esports. ''This platform is dedicated to hosting casual mobile gaming tournaments based on skills for players across genres, including arcade, puzzle, sports, action, quiz, and AR/VR.''
www.skibre.com

Tournament platforms

FaceIt

Keywords: matchmaking, professional gaming, leaderboards
FaceIt is a widely known Esports platform with over 15 million active users. The company has been managing matches for games such as CSGO, LOL, Rocket League, Tom Clancy's Rainbow Six Siege and Dota 2. This platform enables matchmaking with players of the same skill level of a certain game. Faceit focusses on professional gaming, game training and tracking progression. They have a strict policy against cheaters. Therefore, it has increased value for players on the leaderboards.
www.faceit.com

Challonge

Keywords: bracket tournament, gaming
Challonge is a tournament bracket generator with basic functionalities. It is possible to arrange multiple tournaments in one event, it is possible to sell tickets and merchandise and users can track the event activity like sales and visits. They focus on game tournaments, but it also works for traditional sports tournaments. After a match, users must manually add their scores to the platform, and it will automatically show against who the next match must take place.
www.challonge.com

Tournify

www.tournify.nl
Tournify is a software suitable for all kinds of sports and tournaments. There is a function to organize an online tournament, the settings of the tournament will automatically change to an online tournament. Tournify uses a payment system per tournament category. There is a free entry-level version, a world-class version, and a legendary version. In addition, there are special rates for an online tournament. Furthermore, Tournify offers extensive functions in the field of the tournaments:

- Create your own tournament. This software can be used by anyone to facilitate an online or physical tournament. The tournament owner can manage everything within the tournament: teams, players, standings, and results.
- A tournament website. In addition to the management of the tournament, a tournament website can be created where everyone can view the current standings, results, and the program. As a result, no one is dependent on Excel sheets, but everyone can view the entire tournament from any device. On this website the organizer can also show sponsors, each team can view their own program and new teams / players can register via this website.
- A slideshow, Tournify also offers the possibility to show a slideshow with live rankings and results.

ESL Play

www.play.eslgaming.com
ESL Play organizes eSports tournaments and events. Gamers can participate in online tournaments. The platform is completely free, and you can win prizes with the tournaments. It is not possible for external parties to organize a tournament via the ESL Play tournament software. ESL Play offers the following functionalities:

- eSports tournaments with a ladder system. By playing several rounds, the participant rises or falls on the ladder and thus ends up in a ranking.
- Multiple modes. Tournaments consist of different modes. This is different per tournament. There are modes for 1v1, 2v2 3v3 and more.
- Participant profiles. All participants in a tournament have their own profile page. This page contains the general information and the most recent results of the participants.

Battlefy

www.battlefy.com

Battlefy is a large platform with millions of visitors per year. The platform facilitates Esports tournaments. Anyone can create a tournament, and anyone can participate in public tournaments. It's free. Battlefy offers the following features:

- It creates tournaments for each game. With Battlefy, one can facilitate and play any online game.
- Game specific functions. Battlefy offers game specific functions through game integrations. As a result, all data is automatically passed on to Battlefy during the tournaments. The scores and match statistics are kept, the platform also creates the in-game lobby for the matches.
- Contest page. A unique match page is created for each match of a tournament. On this page, players can view all important information about the match.

ClubLadder

www.sportconnexions.com

ClubLadder is a tournament software for clubs that practice traditional sports. The software can be tested with a free trial period, after which paid rates follow. ClubLadder offers the following functionalities:

- An active ladder system. This means that the matchmaking is automatically controlled by an algorithm every 2 months. The players are matched with a similar level.
- Possibility between different sports. The ClubLadder system can be used for multiple traditional sports

Appendix C – Transcription of Exploratory Interviews

Interview I

Gamed 12-16 uur in de week, hardcore gamer
Datum interview 1 maart 2021

Game je?

Ja

Wat voor soort spelletjes?

Shooters, MMOPGs, Teambased (LOL)
Ook is hij ooit naar een eSports evenement geweest. Hij is dus op de hoogte van wat dit is en hij wordt hier enthousiast van.

Hoeveel uur in de week?

Vroeger 25-30 uur
Nu wat minder, tussen 12-16

Met welk doel speel je deze spelletjes?

Om te winnen, beter te worden in het spel, progressie te zien, naar een doel toe werken. Ook dingen zoals reactiesnelheid is een leuke bijkomstigheid.

Doe je ook ooit sociale spellen waarbij je praat met mensen?

Bijna alles in teamverband. Vroeger leerde ik wel mensen kennen via de game. Nu vooral met mensen die ik naast gamen al ken. Of via via.

Voldoet dit aan je sociale behoeften?

Jazeker. Je hebt gewoon contact met elkaar. Zeker nu tijdens corona is het een uitkomst.

Wat zijn de verschillen met een voetbalstadion?

Overeenkomsten: stadion die vol zit, twee teams, fans, teams trainen elke dag.
Verschillen: niet tijdsgebonden, trainen is achter een computer
Ziet niet veel directe verschillen. Begint steeds meer een sport te worden.

Recreatief gebied:
Verschillen: casual potje tennis is minder competitief. Met gamen wil ik meer winnen.

X event bij Tennisvereniging
Wat voor soort competitie was het? Toernooi/ladder/competitie?
Allemaal bedrijven in de regio die gevestigd zijn op x. Worden uitgenodigd om te tennissen. Eerst clinic dan toernooitje. Niveaus zijn ingedeeld op 3 verschillende niveaus.

Wat was het doel vanuit het bedrijf voor het organiseren van dit evenement?
Netwerken, binnen verschillende bedrijven. B2B. (Bedrijven trekken gauw naar het westen, door dit soort evenementen bij elkaar houden.)

Heb je toendertijd feedback, opmerkingen, vragen gehoord van de medewerkers, of medeorganisatoren?

Was in samenwerking met sportcentrum. Er was een plan dat werd uitgevoerd.

Vonden ze het leuk?

Persoonlijk had x het idee dat iedereen het leuk vond.
Lekker weer, potje tennis, tientje pp, BBQ, drinken, foto's gemaakt, veel lol, op en naast de baan. Er was wel een competitieve factor.

Hebben ze bepaalde acties ondernomen na dit evenement?

Dat weet ik niet, wel willen ze elk jaar terugkomen.

Zie je het voor je dat er een online laddercompetitie zou plaatsvinden met games zoals Among Us?

Tennis wordt gedaan door iedereen, elke leeftijd. Bij gamen anders. Zou X best leuk lijken, is maar de vraag of ze daar zin in hebben. Ouderen hebben vaak het idee ga lekker naar buiten.

Zou iedereen hieraan mee willen doen? Is het toegankelijk voor iedereen?

Mensen die vroeger al gegamed hebben zouden de drempel voelen, zien de lol er niet van in. Minder toegankelijk voor die mensen. Iedereen kan een potje voetbal, bekende sport, geen moeilijke controls of iets dergelijks.

Gaat wel steeds meer worden denkt D.

Oogpunt voorzitterschap Tennisvereniging

Tijdens corona wordt er veel tijd in gestopt. Toch is het anders. Mensen blijven niet 'even hangen voor een biertje' na een potje tennis. Hoe het nu ingericht is, misschien ligt het aan X, misschien aan de mogelijkheden. Het is lastig overzicht te houden. Gedeelde interesse is tennis, moeilijk online te doen.

Ik denk dat het kan maar het is lastiger om te doen. De een vindt Sims leuk, de ander COD.

Bij de tennisvereniging kunnen activiteiten nieuw zijn: om het studentenleven te ontdekken. Dit kan niet online.

Interview II

Gamed 5 - 10 uur in de week
Datum interview 1 maart 2021

Speel je zelf ook games? Dit kan alles zijn van Candy Crush tot Counterstrike.

Wat voor soort spelletjes?

Zelda breath of the wild
Animal crossing
Pokemon

Hoeveel uur in de week?

5 - 10 uur in de week

Met welk doel speel je deze spelletjes?

Ingame skills verbeteren

Doe je ook ooit sociale spellen waarbij je praat met mensen?

Ja, Animal Crossing

Voldoet dit aan je sociale behoeften?

Niet per se, maar zou wel kunnen. X ging een keer met haar dispuut allemaal op 1 eiland in Animal Crossing. Dit was erg gezellig en voldeed zeker aan social needs.

Zou dit kunnen werken voor de teambuilding binnen Bedrijf X?

Misschien niet animal crossing, omdat niet iedereen dat heeft. Eerder iets als gather.io. Dat is toch wat leuker dan Zoom maar nog steeds heel laagdrempelig. Dat is belangrijk anders wil niemand meedoen.

Wat doe jij in deze tijd voor Bedrijf X om te werken aan teambuilding?

- Online borrels via Discord
- Teamdag: online kennismaking via praatspelletjes, online escaperoom
- Communicatie via een grote 'spam' appgroep waar iedereen in zit

In deze corona tijden zijn er minder 'frimibo's', we doen wat meer vanuit Bedrijf X zelf: rond de Pasen bijvoorbeeld komt er weer een online activiteit aan.

Reacties over teamdag: mensen hadden geen verwachting dus het viel positief uit. Toch was het leuk om nog extra uurtjes achter je scherm te zitten. Was laagdrempelig. Het doel was kennismaking met de nieuwe mensen, de nieuwe met de oude verbinden. Dat is zeker gelukt door de activiteit: online escaperoom. Mensen moesten echt samenwerken.

Voor corona werd de spam-appgroep meer gebruikt. Nu soms voor dingen als: Stuur je leukste foto met mondkapje. Hier deden wel mensen aan mee, dit was wel interactief.

Heb je ooit een laddercompetitie georganiseerd voor de werknemers van Bedrijf X? Bijvoorbeeld een tennis- of volleybaltoernooi?

Ja we hebben meegedaan aan een tennistoernooi en aan de Batavierenrace.

***(Zo ja)* Met welk doel? Helpt dit voor de teambuilding?**

Dit hielp echt heel erg met de teambuilding. Dit zijn naar mijn mening de beste soort activiteiten om teambuilding te stimuleren.

***(Zo nee)* Denk je dat dit zou helpen voor de teambuilding?**

Zie je het voor je dat er een online laddercompetitie zou plaatsvinden met games zoals Among Us? (Dit is een vrij toegankelijk spel, te downloaden als mobiele app of pc-game. Het is gratis en iedereen kan na 5 minuten uitleg meespelen)

In hoeverre denk je dat hier animo voor zou zijn?

Er is ooit een Among Us frimibo geweest, de animo was niet heel groot. Extra tijd achter je scherm blijft toch een drempel voor mensen, merk ik. Met kerstborrel zeiden staffleden: zit al de hele dag achter mijn scherm, dus heb niet zoveel zin in een online 'wat dan ook'. Dit zou ook gelden voor een online laddercompetitie. Het kan ook meespelen dat deze mensen niet weten hoe leuk gamen kan zijn, of dit als drempel zien.

Zie je het voor je dat er een online laddercompetitie zou plaatsvinden met games zoals Counterstrike? (Dit is een minder toegankelijk spel, hier heb je wel een paar uurtjes voor nodig om erin te komen, wanneer je er in zit is het heel spannend en creëer je echt een teamgevoel)

Counterstrike zou alleen werken voor mensen die dit al spelen.

Maar, de app Ommetje is ook een soort wedstrijd. Echt heel veel mensen binnen Bedrijf X hebben deze app. Het houdt bij of je elke dag een 'ommetje' maakt voor je mentale gezondheid. Sommige mensen zijn daarop tegen. X was er heel erg op tegen en X ook. Zij hebben een stukje extra competitiveness nodig om te motiveren. Zij gebruiken liever de app Strava omdat je daar medailles kan halen, je snelheid en afstand kan zien en je elkaar 'kuddo's' kan geven.

Extra opmerkingen

Op het moment dat je draagvlak creëert willen mensen echt wel meedoen. Dit werkt beter dan alleen promo via bijvoorbeeld de app. X vraagt collega's om dingen te droppen in verschillende groepsapps. Het werkt beter als ze aan een collega vraagt om iets voor te stellen dan dat ze het zelf doet.

Appendix D – Personas

THE HARDCORE GAMER (32, Male)

"I love to spend my time and money on games. I even go on Reddit to read about the newest releases. The first thing I do when I come home from work, is turning on my PC.

When I play very intense games, I sometimes get frustrated. This is when I play first person shooters. This is part of the game; it makes it more fun. It is even more fun when I play with friends, and we are on the same team."

Favorite games: DOTA, Counterstrike, Warcraft

THE CASUAL GAMER (27, Female)

"I am a very social person and love to hang out with friends. Sometimes we play Mario Party on the Nintendo Switch. This is so much fun.

Sometimes when I'm bored, I like to take my Switch, lay on the couch, and play Animal Crossing for hours! It's relaxing. I would not call myself a gamer though. I am not a nerd."

Favorite games: Mario Party, Animal Crossing, Candy Crush

THE NON-GAMER (45, female)

"I never played games before. My kids do, and it's so violent! I don't think I could ever enjoy something like that. They sometimes ask if I want to join but when I look at that joystick, I don't even think I could manage all those buttons.

No, it's not for me. However, I enjoy to play board games with friends and family. So maybe in the future I will find a game that suits me."

Favorite boardgames: Settlers of Catan and Risk

Appendix E – Octalysis Framework, the 8 core drives

This section explains the 8 core drives and illustrates the drives with non-game examples. Non-game examples are chosen to illustrate that the Octalysis Framework can work for Esportsladder. In Figure 6, the 8 core drives are shown with their according typical gamification elements.

These 8 drives are the base of the framework and come back in every level of the Octalysis Framework method.

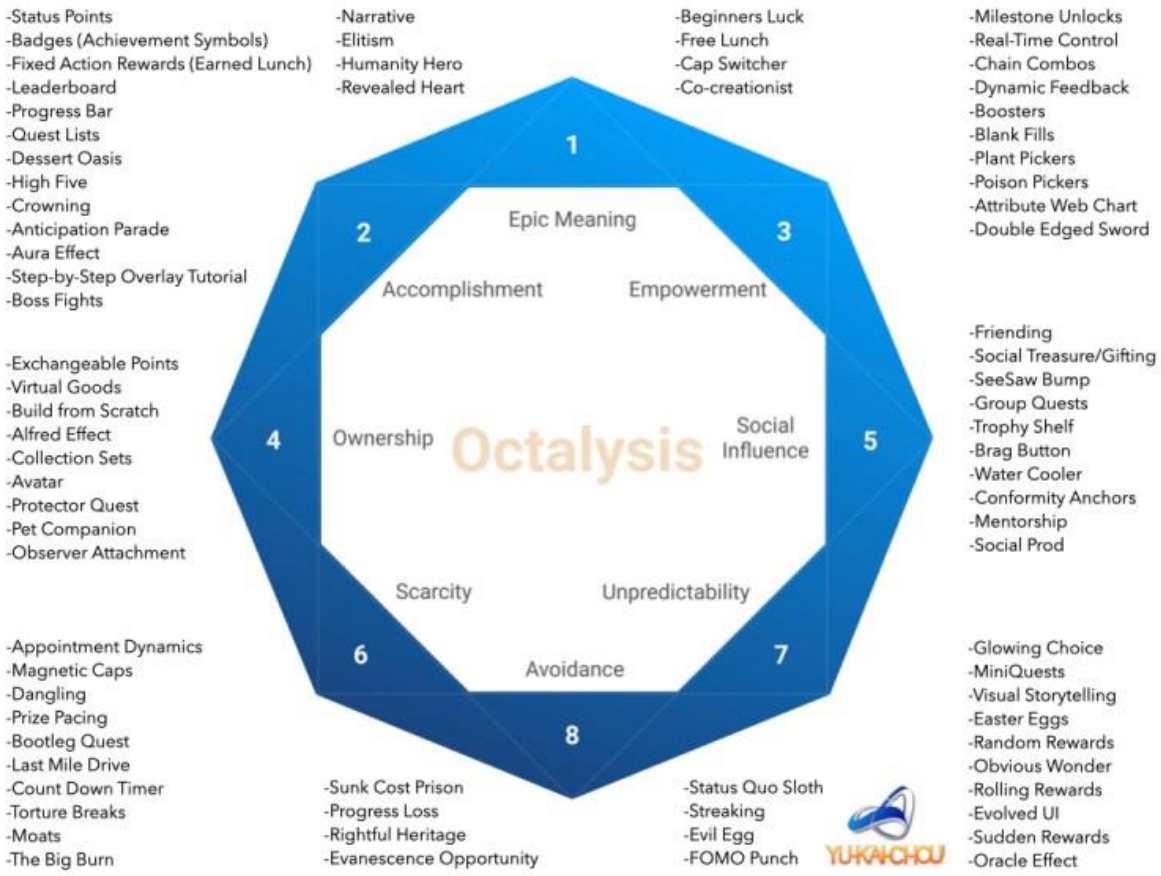


Figure 6: Octalysis with the 8 core drives and attributes (Vinet & Zhedanov, 2011).

(1) Epic Meaning

Example: investing a lot of time to maintain forums or help create things for the entire community (such as Wikipedia or Open-Source projects).

The first core driving force is Epic Meaning & Calling in which people believe that they are doing something bigger than themselves, they are 'chosen' to do something. This also works when someone has 'beginner luck'. People think they have gift that no one else has, or think they are lucky to have this magical item at the beginning of the game.

(2) Accomplishment

Example: LinkedIn introduced the progress bar. This increased a lot of engagement because people want to be the best version of themselves on this platform. Seeing the progress bar at 10% at a 'weak' state is triggering, people work hard to fill their profile to reach the 100%.
Development and achievement are the internal driving forces for making progress, developing skills, and ultimately overcoming challenges. The term 'challenge' is very important, because badges or trophies without a challenge have no meaning at all. According to Chou, this is the easiest core drive to design for.

(3) Empowerment

Example: Lego bricks and painting is fun for some people because these activities have unlimited creativity.
Empowerment of creativity and feedback lies in the fact that when users participate in the creative process, they must figure out things repeatedly and try different combinations. People not only need a way to express their creativity, but they also need to be able to see the results of their creativity, get feedback and respond in turn. It is empowering to create something with your own mind with the building blocks provided.

(4) Ownership

Example: Spending a lot of time on Facebook to create a nice profile with a picture/avatar or collecting something like Pokémon cards.
This is the drive, in which users are motivated because they feel like they possess something. When a person feels ownership, she naturally wants to make what she owns better and own more of it. Besides being the major core drive for wanting to accumulate wealth, it also deals with many virtual goods or virtual currencies within systems and games.

(5) Social influence

Example: Influencer marketing. Influencers on Instagram who seem to have the perfect life motivate people into wanting the same things as them.
The Social influence drive includes all the social elements that motivate people, including competition, envy, mentorship, social responses, acceptance.

(6) Scarcity

Example: Designer bags are too expensive and rare for most people. People desperately want them because of the status and 'cool' factor.
People want things because of the scarcity. Many games use this by implementing Appointment Dynamics: "come back 2 hours later to get your reward". This motivates people to think about it during the day.

(7) Unpredictability

Example: gambling addiction and lotteries

Normally, this is a safe drive of wanting to find out what will happen next. When people don't know what will happen next, people are naturally curious. Many people read novels or watch movies because of this drive. In extreme ways, this driver is the one of gambling addiction.

(8) Avoidance

Example: Takeaway.com uses a recommendation system for restaurants. Restaurants end up selling only via Takeaway.com because they have nice recommendations over there. However, the commissions are getting higher every year. Restaurants want to stop with the service, however they can't because they make too many sales on the platform.

This core drive is based upon the avoidance of something negative happening. Avoiding losing previous work. On a larger scale it could be avoiding admitting that everything you accomplished up to this point was for nothing when you decide to quit.

Appendix F – Process of using The Octalysis Framework

Defining the platform and the user

To be able to answer the questions Chuo defined in his book, the term 'user' needs to be defined. To be able to define the user, the platform must be defined as well because it depends on the definition of the platform which users will use it.

The platform is defined as a ladder competition style Esports platform for businesses. Different gaming competitions can run in parallel. A game that will most likely have a place on this platform is FIFA. The goal of this platform is socializing (B2B, B2C or Business to student).

The users are defined as people who will use the platform. These people are the people who will use the platform. These are students and employees. Different types of users of the proposed platform can be deviated when looking at their gaming experience. When looking at companies, all sort of people work there. In contradiction to traditional Esports platforms, the common property is *not* gaming. Instead, the common trade is the company they work at. For the platform it is important to look at gaming experience and interest. Therefore, it makes sense to divide the target group in the following three types: (1) hardcore gamer, (2) casual gamer and (3) non-gamer.

Preoperational questions

After establishing the personas, three archetypes of users arose: the non-gamer, the casual gamer and the hardcore gamer. The potential users are defined as well as the function of the platform. The next step in preparing for the Octalysis method is to answer the following questions presented by Chuo.

Question	Proposed answer
How do I want my users to feel?	The platform has to be a platform were every user feels welcomed.
Do I want them to feel inspired?	The platform needs to stimulate the users to engage with the platform. It would be nice if people feel inspired to start gaming, join a competition or interact with others.
Do I want them to feel proud?	The platform's initial purpose is to showcase the ladder competition. People who are first in line to win the competition most likely feel proud. However, it is wanted that everyone can feel proud once in a while.

Should they be scared?	No user should feel scared or intimidated when using the platform. Non gamers might get scared away by the hardcore gamers. Design elements should prevent users from feeling scared.
What's my goal for their intended experience?	The overall goal for the platform is for the users to socialize amongst each other without being in the same space. Non gamers should feel motivated and inspired to spent time on the platform and engage with it in the role of spectator. When they feel comfortable and want to stay in the spectator role it is perfectly fine. It is also possible that non gamers shift to casual gamers or even hardcore gamers. If a non gamer has negative prejudices for gaming in general, the goal would be to change their mind. Gaming has many positive aspects and can be a good way to socialize. Casual gamers should not feel intimidated by the hardcore gamers. The intended goal for their experience is to have fun, engage with other people. If the user wants to, it can become a goal to improve gaming skills. However, this is not a requirement. Hardcore gamers should feel challenged. They cannot think the competition is too easy with all the casual and non-gamers. It has to be worth it to join.

Defining Users

As described in section **Error! Reference source not found.**, the users are defined. Below are t he different kind of users, which become players in the system if the implemented game elements work as anticipated. Note that the users are divided by their gaming experience, not the role they fulfill in the platform (e.g.: spectator, competitive gamer). This is because every user can be categorized within these three user types. The goal is to provide the opportunity to

have an active role for each user. These roles can differ from spectating to casual gaming to competitive gaming.

Every user will fall under one of these categories:

- Non gamers
- Casual gamers
- Hardcore gamers

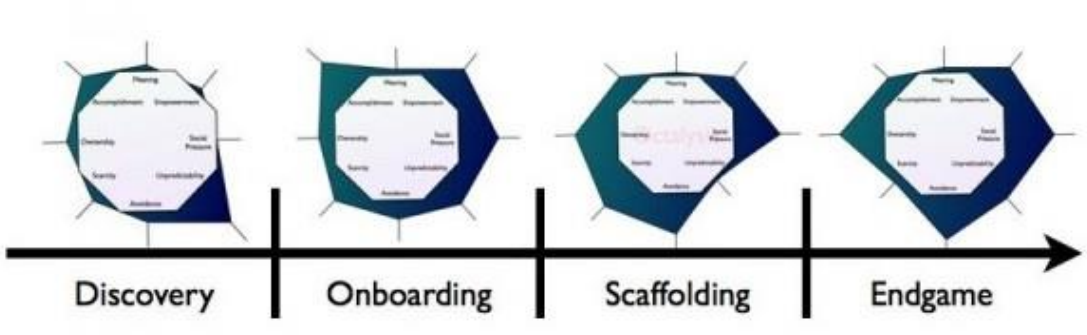
Defining Desired Actions

On the next page, the desired actions that make up a logical player's journey which goes from the Discovery phase to the endgame are displayed. Chuo visualizes the four phases a player goes through by four phases: The discovery, onboarding, scaffolding and the endgame. Chuo believes one should not treat an idea as one product. Instead, he encourages to look at a product as four individual ones and therefore, design for four different stages. Which is what is done in this section.

The players journey in terms of motivation:

- Discovery phase: the first encounter the user has with the product
- Onboarding phase: training the user to get to know the product and the win-states
- Scaffolding phase: the user tries to get to as much win-states as possible
- Endgame: the remainder of the user using the product

Every designed element needs to motivate users towards these Desired Actions. If the intended element does not motivate users to undertake action, the element is a distraction and should be disregarded. Every Desired Action, when committed, leads to a Win-State.



Four phases in a player's journey. As can be seen in this figure, every phase has different dominant Core Drives.

Level 1 Octalysis

After defining the aspects of the Octalyis Framework as a preparation, the first official step in The Octalysis Framework is to look at existing, similar services or products. The first step of utilizing Octalysis as a method is to recall all the core drives that are present in the experience.

Level 1 Octalysis is the first level of The Octalysis method. At this level, analyzing the strengths and weaknesses of similar products in respect to motivation is the main goal. To complete this step platforms are analyzed with the Octalysis tool[1]. In this step it is important to start thinking about how these platforms utilize each of the 8 core drives. The goal is to identify all game elements and game mechanics that are used to activate the 8 core drives.

This is done by looking at and trying out similar platforms or concepts. The following steps will be proceeded per platform:

1. Getting a general overview by going to the platform and clicking through
2. Create an account (if possible)
3. Check out functionalities
4. If the information received is not adequate yet, watch streams on Twitch or YouTube of people using the platform to get a better impression
5. Read on forums about the platform, encounter peoples thoughts
6. Construct the 8 core drives with the Octalysis tool

[1] Last retrieved at June, 2021 https://yukaichou.com/octalysis-tool/

Octalysis review of T.C. Ludica's ladder competition

Octalysis Analsysis of the ladder competition at T.C. Ludica

The T.C. Ludica Ladder competition is strong in the white hat core drives (accomplishment, epic meaning and empowerment). This means that users feel great and empowered when participating in the ladder competition hence, the success of the competition today. Most participants are constantly looking for new matches and are excited to play a new game and get better at tennis.

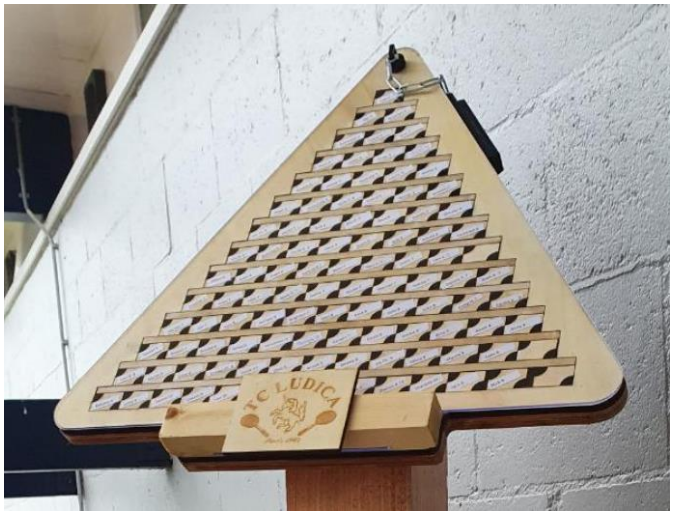
The drawback is that users lack in the sense of urgency to commit to the competition, when they are on the low side of the ladder, the sense of excitement can go away. When on the low side of the ladder, a lot of people don't seem to worry much about it. It does not seem to make big of an impact when being on the lowest ranks.

There is a strong sense of Core Drive 1: Epic Meaning & Calling. When participating in the ladder competition. T.C. Ludica is a huge association with 400 members, it is perceived as difficult to

feel part of the core of the association which only includes around 50 members. The ladder competition is an easy way to join the core because it forces you to come to Ludica more often.

Also, there is a strong sense of Core Drive 3: Empowerment of Creativity and Feedback. Often, when a match is scheduled, friends will watch the match in the stands. This provides the players with instant feedback. For example when people clap for the winner or when the physical name tag goes up a rank in de ladder. This aligns with Core Drive 5: Social Inflence because it's perveived as 'cool' when you go up a rank in the ladder. Also, it is common that people will talk to you about the match afterwards.

The ladder competition of T.C. Ludica is lacking in Core Drive 6: Scarcity & Impatience. Everybody can join for free and without too much responsibility. Also Core Drive 8: Loss & Avoidance is lacking. When a new round of the competition starts, all history is gone. A fresh start so people aren't motivated by this core drive either.



Physical ladder based at T.C. Ludica

Octalysis review of ClubLadder

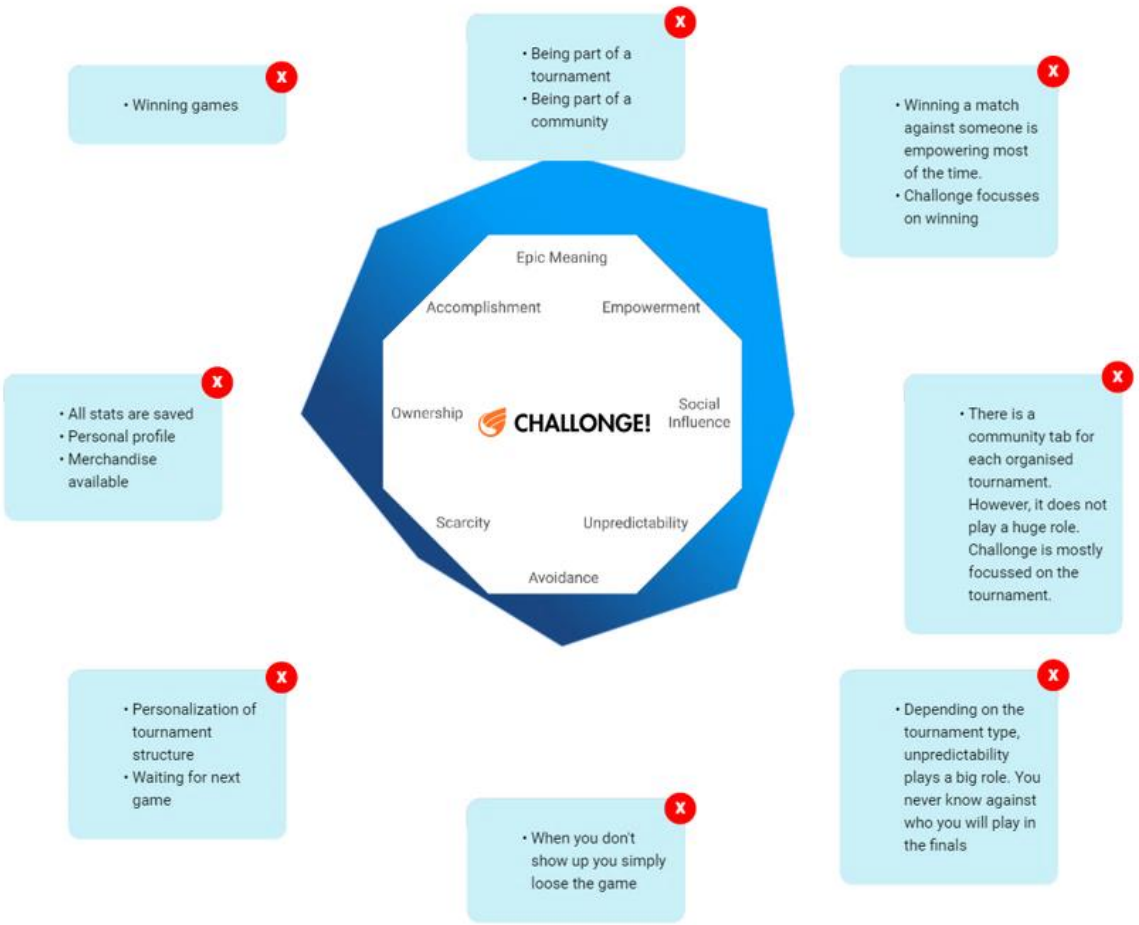
This section describes the analysis of the ladder-competition-style platform named 'ClubLadder'. Using the Octalysis Tool, Figure 7 is created. ClubLadder is a tournament software for clubs that practice traditional sports. The software can be tested with a free trial period, after which paid rates follow. ClubLadder offers the following functionalities:

- An active ladder system. This means that the matchmaking is automatically controlled by an algorithm every 2 months. The players are matched with a similar level.
- Possibility between different sports. The ClubLadder system can be used for multiple traditional sports Accomplishment seems to have great impact in ClubLadder as well as Social influence. There is opportunity for implementing elements for other core drives.

Octalysis analysis of ClubLadder

Octalysis review of Challonge

Challonge is a tournament bracket generator with basic functionalities. It is possible to arrange multiple tournaments in one event, it is possible to sell tickets and merchandise and users are able to track the event activity like sales and visits. They focus on game tournaments but it also works for traditional sports tournaments. After a match, users have to manually add their scores to the platform and it will automatically show against who the next match has to take place.



Octalysis analysis of Challonge!

Designing for all users

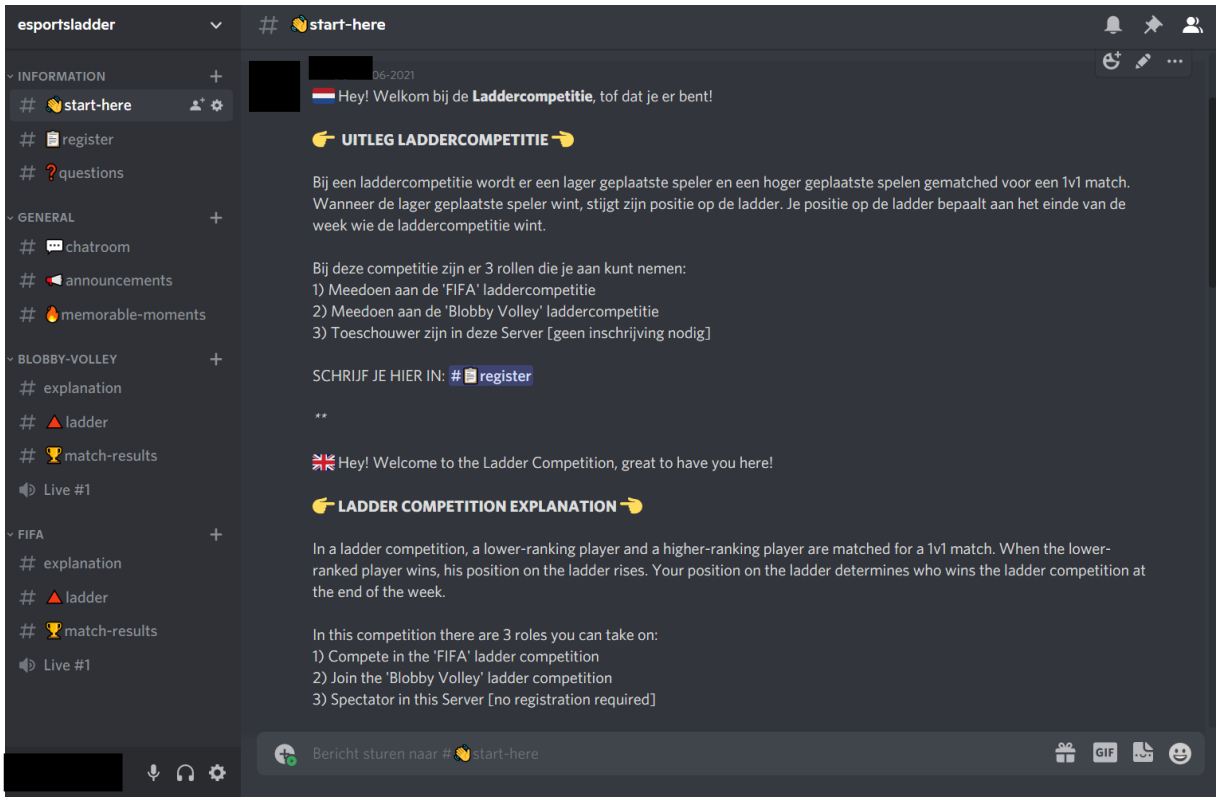
With the help of the Octaysis Framework, the table below is created. By doing this the goal is to design for multiple users (non-gamers, casual gamers and hardcore gamers) in different phases. For this research not every phase is designed for. However, this table helped a lot coming up with potential features that would appeal to different types of gamers.

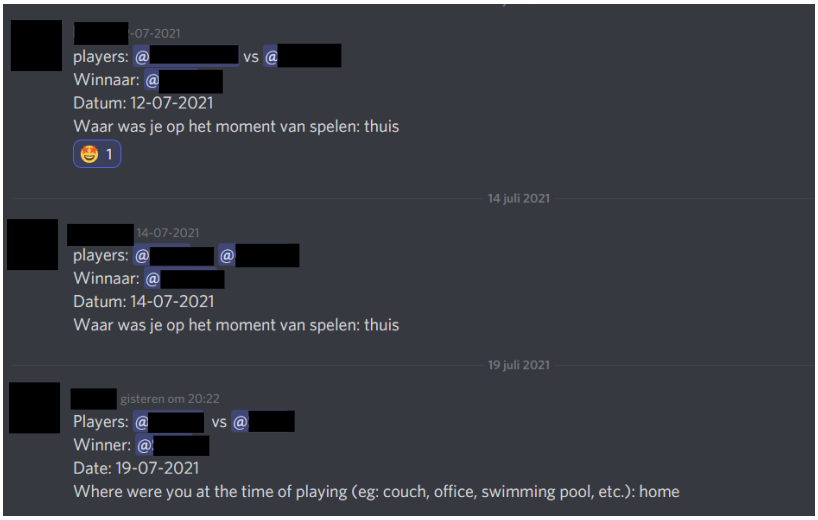
Hardcore gamer	Hardcore gamer's discovery	Hardcore gamer's Onboarding	Hardcore gamer's Scaffolding	Hardcore gamer's Endgame
Casual gamer	Casual gamer's discovery	Casual gamer's Onboarding	Casual gamer's Scaffolding	Casual gamer's Endgame
Non-gamer	Non-gamer's discovery	Non-gamer's Onboarding	Non-gamer's Scaffolding	Non-gamer's Endgame
	Discovery phase	**Onboarding phase**	**Scaffolding phase**	**Endgame**

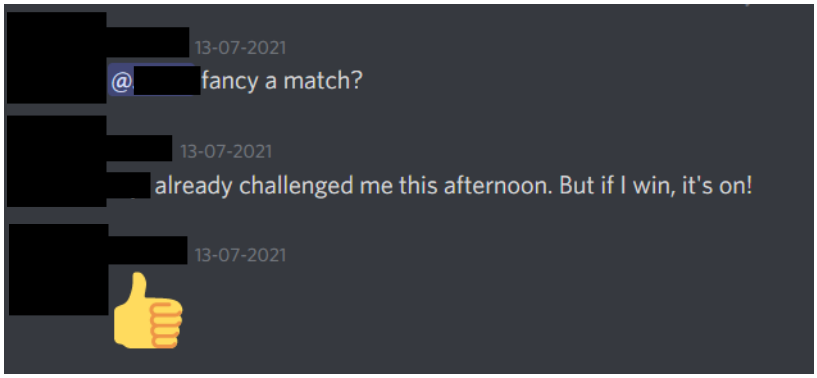
The features that came from using this method are listed in the table below.

Features	Phase (See table above)	Reasoning
Spectator functionality	Non-gamer's onboarding phase	When trying to think like a non-gamer in the discovery phase, the first thing that might come to mind is that, why would a non-gamer use an Esports platform? Actually it is not that farfetched that a non-gamer would use Esportsladder. Streaming platforms like Twitch and YouTube exist because of the spectators, a fair amount of spectators don't game themselves but just find in entertaining to watch. This is how the idea of a spectator functionality originated. The spectator functionality would serve as an interesting feature because people don't have to actively join a competition, it is fine if they just 'stick around to watch others play games'.
Casual game functionality	Casual gamer's discovery phase	When trying to think like a casual gamer, I can imagine that it can be intimidating to see an esports platform. Questions that they might have could be, isn't this for 'real' gamers? Hopefully, when they realize a casual gaming competition is also an option, they stick around.
Hardcore game functionality	Hardcore gamer's discovery phase	On the opposite, a hardcore gamer should feel like there are options for him as well. The platform should find balance between the different kinds of gamers and not only attract one. Therefore, a hardcore gaming competition should be present.
Social feed with interactive features	Onboarding phase of all types of gamers	In the onboarding phase, it is important to keep the users coming back to the platform. This is how the idea of a social feed came up. This might be helpful in onboarding different users. Also, this might strengthen the socializing and network opportunities in the platform. Ideas that can be in this feed: - Like and 'booh' button - Share - Comments - The outcome of a match
Physical ladder representation	Endgame	The idea of a physical ladder mainly came from the ladder competition of Ludica. This thing helps with the Endgame. It helps keeping the competition 'alive'. People keep coming back to manually put themselves up or down.
Community building	Onboarding phase	This idea is in line with the social feed. When all kinds of users interact with each other, the community feeling might get better.

Appendix G – Impression of Discord server







Appendix H – Tangible ladders

Appendix I – Impression of setup of Mimicking Esportsladder

People who participated in the field trial could participate online but there was also an opportunity to game at University of Twente. FIFA was the game that participants were able to play at this location.

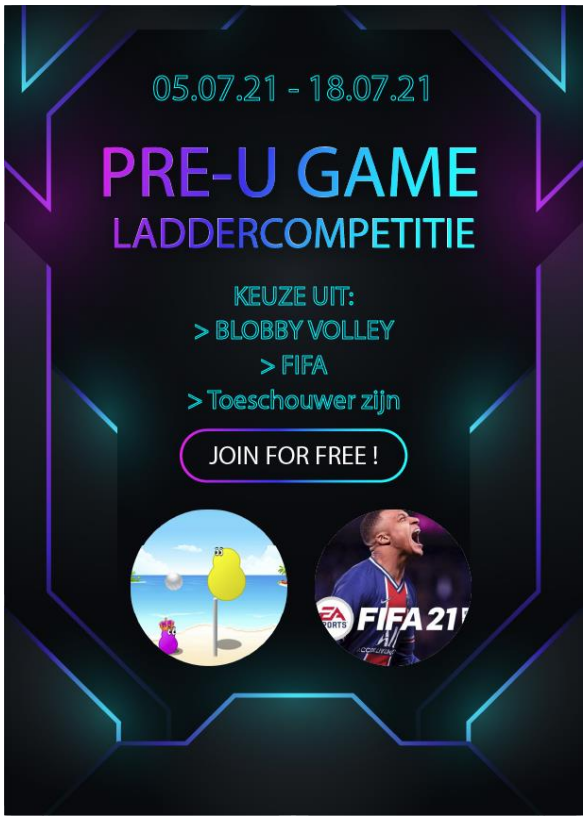
See the picture below for an impression.

Two participants playing FIFA for the Esportsladder competition. On the right the tangible ladder is visible.

Appendix J – Flyers

These flyers were designed to promote the field trial.

The flyer on the left was designed specifically for the organization Pre-U, the initial idea was to do the field trial within that organization but due to lack of participants, the researcher expanded the promo to the Gallery. A new flyer was designed for that as can be seen on the right.



Appendix K – Business model canvas of Esportsladder

Business model canvas by the Esportsladder team. Note that it is still under construction at the time of writing.

Appendix L – Usable files

All files that may come in handy in the future are gathered in this Google drive folder.

- Several flyer designs
- Logo design
- Laser cut pattern for tangible ladder
- A video impression of the Discord server
- PowerPoint presentation in Esportsladder style

Appendix M - Survey Questions

Q1 Hoe beschrijf je jezelf?

MC [vrouw,man,non-binar,liever zelf beschrijven___, zeg ik liever niet]

Q2 Hoe oud ben je?

Q3 Ik ben

MC [Student, Werknemer, Werkgever, Anders namelijk___]

Q4 Welke term beschrijft jou het best?

MC [Non-gamer, Casual gamer, Hardcore gamer]

[OPTIE 1] **Q5a > Lees onderstaande tekst goed door anders kun je niet verder met de enquête.**
Esportsladder is een website waarop je kunt gamen. Je vindt er informatie over de game toernooien en je kunt mensen uitdagen voor een spel. De doelgroep bestaat uit **werknemers, studenten** en **bedrijven**. Het uiteindelijke doel van dit platform is het voorzien van een manier om (online) te kunnen **netwerken** en **socializen**. Vergelijkbaar met een netwerkborrel inclusief activiteit maar dan online. In tijden van COVID-19 is dit handig maar ook daarbuiten heeft het voordelen. Het is een makkelijke, laagdrempelige en snelle manier om met veel mensen en bedrijven in contact te komen.

Een paar voorbeelden:
- Een student komt in contact met een bedrijf na een spannend potje gamen en komt zo aan een stageplek.
- Twee verschillende bedrijven komen met elkaar in contact omdat ze allebei meededen aan hetzelfde toernooi. Na het spannende toernooi bespreken ze wat ze voor elkaar kunnen betekenen.
- Een bedrijf heeft een vacature open staan waar studenten op kunnen reageren. Het bedrijf doet een oproep op Esportsladder.

[OPTIE 2] **Q5b** Esportsladder is een website waarop je kunt gamen. De doelgroep bestaat uit werknemers, studenten en bedrijven. Je vindt er informatie over de game toernooien en je kunt mensen uitdagen voor een spel. Als gevolg hiervan zou je in contact kunnen komen met anderen.

Q6 ***Op basis van bovenstaande informatie, in hoeverre ben je het eens met onderstaande stellingen?***
(5 Pt. Likert Scale) Het gebruik van Esportsladder zou.. [Perceived Usefulness]

(PU1) ..voordelen voor mij kunnen hebben.
(PU2) ..mijn prestaties kunnen verbeteren op het gebied van netwerken.
(PU3) ..mij kunnen helpen om effectiever te worden op het gebied van netwerken.
(PU4) ..algeheel nuttig kunnen zijn.

Q7 *Esportsladder is een website waarop je tegen anderen kunt gamen. Wanneer je besluit deel te nemen, doe je mee aan een laddercompetitie (een soort toernooi waarbij je, in tegenstelling tot de meeste toernooien, niet beperkt bent tot een bepaald aantal rondes). Je stijgt of daalt op de ladder naarmate je wint of verliest. Er wordt voor jou bepaalt tegen wie jij een potje moet gamen, het zal altijd iemand zijn die één trede boven of onder je staat. Als je wint ga je een trede omhoog, als je verliest ga je een trede omlaag.*
In hoeverre ben je het eens met onderstaande stellingen? [risks]
(5 Pt. Likert Scale) Ik zou het vervelend vinden als ik..

(RISK1) ..mee moet doen met de laddercompetitie.
(RISK2) ..mijn vrije tijd in de competitie moet stoppen.
(RISK3) ..de game nog nooit eerder gespeeld heb.
(RISK4) ..tegen een vreemde moet spelen.

(RISK5) ..niemand ken in de laddercompetitie.
(RISK6) ..moet praten met mijn onbekende tegenstander.

Q8 *Op de website Esportsladder kun je kijken naar anderen die tegen elkaar aan het gamen zijn. Dit is te vergelijken met toeschouwer zijn van een voetbalwedstrijd, maar dan online via je beeldscherm. [Spect>gaming]*
In hoeverre ben je het eens met onderstaande stelling?

(5 Pt. Likert Scale) Ik zou liever kijken naar anderen die gamen dan zelf meedoen aan de laddercompetitie.

Q9 *Op Esportsladder kun je kijken naar anderen die tegen elkaar aan het gamen zijn. Dit is te vergelijken met toeschouwer zijn van bijvoorbeeld een voetbalwedstrijd, maar dan online.*
In hoeverre ben je het eens met onderstaande stellingen?
(5 Pt. Likert Scale) Wanneer ik toeschouwer zou zijn van anderen die tegen elkaar gamen zou ik.. [Spectatorship]

(SPEC1) ..de anderen willen zien via video.
(SPEC2) ..fanatiek worden.
(SPEC3) ..willen juichen.
(SPEC4) ..het boeiend vinden.
(SPEC5) ..er enthousiast van worden als iemand heel goed is in het spel.
(SPEC6) ..één kant kiezen om aan te moedigen.
(SPEC7) ..willen communiceren met de rest van het online publiek.

Q12 *Stel je voor: je bent toeschouwer van een wedstrijd uit de laddercompetitie van twee van je collega's. Dit houdt in dat je via een scherm meekijkt en dus niet in het echt aanwezig bent bij de wedstrijd.*
(5 Pt. Likert Scale) **Hoe vaak zou je onderstaande functies gebruiken om deel te nemen aan de interactie met de rest van het online publiek?** [Spectator functionalities]

(SPECFUNC1) Emoji's [bijvoorbeeld duimpje omhoog of een hartje wat in beeld komt bij de rest van het online publiek]
(SPECFUNC2) Een 'boe' / 'juig' knop [een kort audiofragment wat de rest van het online publiek te horen krijgt]
(SPECFUNC3) Spraakbericht [iets inspreken wat de rest van het online publiek te horen krijgt]
(SPECFUNC4) Tekstbericht [iets typen in de chat, dit kan de rest van het online publiek lezen]
(SPECFUNC5) Tekst naar spraak [wat je typt wordt automatisch omgezet in spraak, de rest van het online publiek kan dit horen]

Q13
(5 Pt. Likert Scale) ***In hoeverre ben je het eens met onderstaande stellingen?*** [Feed]

Wanneer ik op de homepagina van Esportsladder kijk zou ik het leuk vinden om..

(FEED1) ..de uitslagen van anderen te zien.
(FEED1)..iemand te feliciteren met een overwinning.
(FEED1)..de uitslagen van degene boven en onder mij op de ladder extra goed in de gaten te kunnen houden.
(FEED1)..te weten wanneer de finale plaatsvindt ook al zit ik niet in de finale.
(FEED1)..het gehele overzicht van de ladder in de gaten te houden.
(FEED1)..te reageren op de uitslagen van anderen

Q14
(5 Pt. Likert Scale) *Stel je voor: je hebt een wedstrijd gewonnen en bent een trede gestegen op de ladder.*
Hoe vaak zou je onderstaande opties gebruiken om dit te delen op de website? [Feed functionalities]

(FEEDFUNC1) Een foto van de plek waar je hebt gegamed
(FEEDFUNC2) Een foto van jezelf
(FEEDFUNC3) De uitslag van de wedstrijd delen
(FEEDFUNC4) Een tekstje
(FEEDFUNC5) Een filmpje

(FEEDFUNC6) Een emoji / smiley

(FEEDFUNC7) Een gifje (een kort filmpje dat herhalend afspeeld)

Q15 *Stel je voor, je wordt gevraagd om mee te doen met een gamecompetitie.*

In hoeverre ben je het eens met onderstaande stellingen? [Casual Competition]

(5 Pt. Likert Scale) Ik zou alleen meedoen als..

(CASUALCOMP1) ..ik het spel al ooit eerder heb gespeeld.

(CASUALCOMP2) ..ik het spel snel kan leren spelen.

(CASUALCOMP3)..één potje niet langer dan 10 minuten zou duren.

(CASUALCOMP4) ..het spel makkelijk te begrijpen is.

(CASUALCOMP5) ..ik het spel op mijn telefoon kan spelen.

Q16

Speel je ooit games? (LET OP: dit kunnen ALLE soorten games zijn, van spelletjes op je telefoon zoals Wordfeud of CandyCrush tot PC games tot Xbox games. Bordspellen tellen NIET mee.)

MC (ja, nee)

Q17

(5 Pt. Likert Scale) **In hoeverre ben je het eens met onderstaande stellingen?** [TOG-scale]

(TOG-SCALE 1) Ik maak tijd vrij om te kunnen gamen.

(TOG-SCALE 2) Tijdens het gamen ben ik geconcentreerd.

(TOG-SCALE 3) Ik besteed tijd op gaming forums of online communities.

(TOG-SCALE 4) Ik raak gefrustreerd tijdens het gamen.

(TOG-SCALE 5) Gamen is een vast onderdeel in mijn leven.

(TOG-SCALE 6) Ik geef geld uit aan games.

Q18 Welke game(s) speel je het liefst? (Games op je telefoon zoals CandyCrush tellen ook mee)

Q19 *Stel je voor, Esportsladder komt op je pad.*

In hoeverre ben je het eens met onderstaande stelling?

(INTENTION1) Ik zou van plan zijn Esportsladder te gebruiken.