'Influence of an online video game community on the willingness to buy'

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Table of Contents

Acknowledgements

Abstract

In this paper, I investigate the video game livestreaming communities and the connection with the willingness to buy of the consumer. The paper focusses on the solidness of these video game livestreaming communities and the influence on the consumers' willingness to buy. Using a theoretical framework and fieldwork in the form of a survey to answer the different hypotheses stated. The researcher investigates the possible main effect between the solidness of these communities and the willingness to buy. Besides, two mediating variables are investigated that might explain this main effect. eWOM and conformity are investigated in the form of mediating variables. Results show that parts of these effects occur and parts do not. For example, the connection between the different community members does influence the willingness to buy of such a community member. These existing effects are partly mediated by eWOM and conformity. This paper is useful for businesses and as a setup for further research.

Chapter 1: Introduction

Is video game livestreaming important for businesses or solitarily for fun among the community members?

In the first chapter, the researcher will discuss the problem statement of the research. The research question will be discussed, and the academic and managerial relevance of the subject is addressed.

1.1 Problem statement

This research paper investigates the relationship between the solidness of video game streamers' communities and the consumers' willingness to buy. Besides, the researcher investigates whether this possible effect is mediated by electronic Worth-of-Mouth and/or conformity. Communities are researched by multiple researchers; however, they almost never specify a gaming livestream community and when they do, they do not try to research the relationship with the consumers' willingness to buy. However, these communities might be a great opportunity for businesses. Whenever these communities play a role in the willingness to buy of a consumer, businesses should seize the opportunity and, for example, sponsor a big streamer (part of conformity) to gain more awareness and traffic to their website.

1.2 Research question

"*To what extent does the solidness of communities of a (video game) streamer influence the consumer's willingness to buy?*"

The sub-questions to answer this research question are:

Question 1: "*To what extent does eWOM mediate the influence of the solidness of a video game streamers' community on the willingness to buy?*"

Question 2: "*To what extent does conformity mediate the influence of the solidness of a video game streamers' community on the willingness to buy?*"

Question 3: "*To what extent does a consumer seek 'input' from their community before making a decision?*"

1.3 Managerial Relevance

This study is relevant for managers and businesses, because the industry of online gaming and communities is an industry that is not researched a lot. Besides, twitch alone has over 15 million daily viewers and 2.2 million people stream on twitch themselves (Iqbal, 2020). A lot of these consumers are part of a community. The community members that are part of these communities discuss several things with each other from games to politics to fashion and so on. Businesses could anticipate on these events and promote their brand to a certain community whenever it is discovered that fashion is a hot topic in this community. This could lead to more awareness and in the end lead to more sales. This paper shows in what way the community member is influenced on their willingness to buy.

1.4 Academic Relevance

Solidness of a community is investigated by multiple researchers. They investigated, for example, the characteristics of this variable or something similar such as the sense of the community (Mcmillan & Chavis, 1986; Yetim & Yetim, 2014; Blanchard & Markus, 2004; Koh & Kim, 2003). Besides, some researchers investigated the value of online virtual communities (Cothrel, 2000). Moreover, the effect of an online community on purchase behaviour is also researched (Kim, Lee, & Hiemstra, 2004). However, these relationships are never tested in an online videogame streaming environment. Other dynamics can come in to play in these communities. Besides, eWOM is investigated in online communities and in relation with the purchase intention or decision making of a consumer (Moran, Muzellec, & Nolan, 2014; Matute, Polo-Redondo, & Utrillas, 2016; Gruen, Osmonbekov, & Czaplewski, 2006; Hernández-Méndez, Muñoz-Leiva, & Sánchez-Fernández, 2015). However, this is never researched in a mediating setting between the solidness of a video game streaming community and the consumers' willingness to buy. And never in an online video game streaming environment. Moreover, conformity is a term that arises in communities and is, therefore, researched in different settings. For example, different kinds of conformity and characteristics are researched (Park & Feinberg, 2010; Locks, Hurtado, Bowman, & Oseguera, 2008; Glass & Westmont, 2014; Burnkrant & Cousineau, 1975). Besides, it is researched as a mediator in buying behaviour of online consumers (Lee & Park, 2008). It is, however, not researched in a mediating role between the solidness of an online video game community and the consumers' willingness to buy. Hence, all these variables are investigated in one way or the other, but never

in the setting of an online video game stream community and/or in relation with the willingness to buy of a consumer.

Chapter 2: Theory

In chapter 2, theory, a literature review is given where the different variables of the conceptual model are described. The hypotheses are discussed in the paragraphs where the relations between the variables is described. After the literature review, the conceptual model is given.

2.1 Literature review

To get a better understanding of the subject, this chapter focusses on the literature review and background of the subject. This literature review consists of the following main topics: the current field of live streaming (mainly focused on gaming), the communities and their solidness, (electronic) worth-of-mouth in these communities, conformity & the willingness to buy of consumers. Following this research, the relations of the variables in the conceptual model are analysed and described. Besides, the hypotheses are described in these paragraphs.

Live streaming (mainly focused on gaming)
The phenomenon of video game live streaming is literally the streaming of a video game (Kaytoue, Silva, Cerf, Meira, & Raïssi, 2009). This market is becoming big, in 2013 more than 40 million people watched these gaming video channels (Pires & Simon, 2014). This (video game) live streaming phenomenon consists mainly of a few platforms where streamers and members come together to watch other people play videogames. These platforms consist mainly of TwitchTV, YouTube Live, Mixer & Facebook Live (Smith, Obrist, & Wright, 2013; Kaytoue, Silva, Cerf, Meira, & Raïssi, 2009; Pires & Simon, 2014; Bogorad, 2019). The main categories of live streaming can be divided in the following subjects: chatting, sharing info, 24/7, slice of life, entertainment media and commerce (Friedländer, 2017; Cai & Wohn, 2019).

The communities (solidness)
Live streamers create their own community over time. An example of that are the '*Courageous',* a community that YouTuber Jack '*Courage*' Dunlop created (Courage, 2019). Members (and non-members) are able to buy merchandise from this streamer and support him by donating to his stream (Design by Humans, 2019; Courage, 2019). There are not only communities for particular streamers. For example, the e-sports community (Kaytoue, Silva,

Cerf, Meira, & Raïssi, 2009). E-sports is a part of gaming where players professionalize their gameplay and play in tournaments against other players. This can be individual and with teams (Martončik, 2015). Communities are mostly known as 'gated communities' these are gated residential areas in certain cities (this is not the only form of communities we know, but it paints a good picture of what a community is) (Roitman, 2010). Online communities are a virtual organizational form, in which knowledge can be exchanged and joy can be expressed with each other (Faraj, Jarvenpaa, & Majchrzak, 2011; Nimrod, 2011).

Solidness of a community can also be described as the sense of community. McMillan & Chavis describe the sense of a community in four parts, namely membership, influence, fulfilment of needs and emotional connection (Mcmillan & Chavis, 1986; Hamilton, Garretson, & Kerne, 2014; Kim, Lee, & Hiemstra, 2004). Membership is feeling a part of the group and a feeling of personal relatedness (Mcmillan & Chavis, 1986). This component determines who is part of the community (Hamilton, Garretson, & Kerne, 2014). Influence can be described as to what extent a community member can impact the rest of the community (Mcmillan & Chavis, 1986). This is strongly linked with conformity, because community members get effected by other community members (Hamilton, Garretson, & Kerne, 2014). To what extent are the needs of the community member fulfilled? That is the main question to be asked for the third component, fulfilment of needs. Needs are, for example, success, feeling of belongingness, and so on (Yetim & Yetim, 2014; Hamilton, Garretson, & Kerne, 2014). Last, the emotional connection between community members and their streamer. The more solid a community is, the higher the emotional connection is (Mcmillan & Chavis, 1986). According to Brodie et al., connection is a part of the consumer engagement. High engagement of consumers leads to high connection, loyalty, satisfaction, and so on (Brodie, Ilic, Juric, & Hollebeek, 2013).

Communities and their solidness can cause a positive worth-of-mouth and a level of conformity which can lead to a positive effect on the willingness to buy of a community member (Brown, Broderick, & Lee, 2007; Hamilton, Garretson, & Kerne, 2014).

(electronic) Worth-of-Mouth
Worth of Mouth: '*oral, person-to-person communication between receiver and communicator whom the receiver perceives as non-commercial, regarding a brand, a product or a service*'

(Arndt, 1967, p. 5). Hence, a conversation between independent consumers about a brand, product or a service. Some researchers use WOM and eWOM interchangeable (Yeap, Ignatius, & Ramayah, 2014), however, there are a few important differences. First, WOM is a one to one conversation between two or more persons. eWOM, however, requires no one to one conversation. For example, in a review form (King, Racherla, & Bush, 2014). Second, the diffusion of eWOM goes at a higher pace than WOM because eWOM uses the internet (King, Racherla, & Bush, 2014). Finally, a negative side of eWOM in comparison with WOM is the credibility of anonymous reviews, for example. WOM is usually between two persons who know each other. eWOM is, however, between consumers who do not know each other (Luo, Luo, Schatzberg, & Sia, 2013).

Saying positive things about a certain product or recommending products to other consumer is a form of eWOM (Liao, Wu, Widowati, & Chen, 2012; Zeithaml, Berry, & Parasuraman, 1996; Gruen, Osmonbekov, & Czaplewski, 2006).

Researchers Brown & Reingen suggest that consumers with a strong relationship tend to communicate and exchange more information (Brown & Reingen, 1987).
In addition, strong relationships have a positive influence on the receivers' behaviour, because of the frequency of social contact (Bansal & Voyer, 2000). Therefore, Leonard-Barton states that strong relationships have a positive influence on the decision-making process (Leonard-Barton, 1985). For example, in the travelling business eWOM has already proven to have a positive effect on the decision-making process. Experiences are shared in communities and other travellers learn from these previous travellers (Hernández-Méndez, Muñoz-Leiva, & Sánchez-Fernández, 2015). Research shows that experiences from other consumers have a higher influence than branded messages (Kozinets, Valck, Wojnicki, & Wilner, 2010). Hence, shared experiences of a consumer have a positive influence on the willingness to buy (Moran, Muzellec, & Nolan, 2014). Therefore, positive worth of mouth in a community can have a positive influence on the decision-making process and willingness to buy (Moran, Muzellec, & Nolan, 2014; Brown, Broderick, & Lee, 2007).

Conformity in communities
Conformity is described as a particular behaviour a consumer displays, because they copy others doing that (Claidiere & Whiten, 2012). Venkatesan studied communities in 1966, he

researched the phenomenon of conformity in communities. Consumers tend to conform to the groups norm when they make decisions (Venkatesan, 1966). According to Claidiere & Whiten, conformity is one of the main categories of social influence (Claidiere & Whiten, 2012). Members of a community tend to be influenced by other members that is, in other words, conformity (Huang, Shi, & Wang, 2012).

According to Park & Feinberg, conformity can be divided into two categories, namely informational and normative conformity (Park & Feinberg, 2010). Informational conformity can be explained as a sense of belongingness and community expertise. Sense of belongingness can be described as to what extent a community member feels part of the community. Does he or she feel that she belongs to the community (Locks, Hurtado, Bowman, & Oseguera, 2008; Glass & Westmont, 2014). The higher the sense of belongingness, the higher the trust and the higher the conformity (Park & Feinberg, 2010). Moreover, community expertise also results in a higher level of conformity among the members of a community. According to Burnkrant & Cousineau, consumers tend to conform when the expertise in the given group is high (Burnkrant & Cousineau, 1975).

Normative conformity can be explained by self-esteem and involvement (Park & Feinberg, 2010). Self-esteem is a level of personal judgement, it is the view on yourself whether you are worthy or not worthy. So, how do you feel about yourself. (Baumeister, 1998; Coopersmith, 1967). Lower self-esteem results in a higher conformity level (Park & Feinberg, 2010). Besides self-esteem, involvement of the consumer also explains normative conformity. When a consumer is more involved with a product, he is likely to be more interested in other consumers their opinion (Grossman & Wisenblit, 1999; Witt & Bruce, 1970; Park & Feinberg, 2010).

So, communities create some sort of conformity. Streamers of these communities are the foremost members of these communities who institutes the social behaviour (Hamilton, Garretson, & Kerne, 2014). Community members tend to conform to the norms and regulations a streamer sets during a stream (Rines, 2020). Obedience is a form of conformity whenever persons are expected to obey, to rules, for example. Children are the most important example of obedience. They are expected to obey to the rules of their parents (Murray, Trudeau, Russell, & Schaller, 2011). So, streamers also create forms of conformity. A consumer might conform to the norms of a streamer when buying a sponsored item of this streamer.

Another form of conformity that appears in the online video game market is the conformity to masculine norms. Fox & Tang investigated sexism in this market and conformity to masculine norms (Fox & Tang, 2014). Video game players tend to belief that video games are only for men and, are therefore sexist towards female video game players (Bègue, Sarda, Gentile, Bry, & Roché, 2017). Besides, these players tend to conform to the group's norms. So, whenever the majority of the group states that video games are for men, the rest of them will conform with this opinion (Fox & Tang, 2014).

Moreover, consumer behaviour and attitudes can be influenced by conformity. Social influences result in a change in purchase intention of the consumer (Chen & Lu, 2015; Lascu & Zinkhan, 1999). Purchase intention is a consumers' willingness to buy (this variable will be analysed in the next section) (Dodds, Monroe, & Grewal, 1991). So, conformity can change the purchase intention. Is it also a factor that mediates the effect of the solidness of the community on the willingness to buy of a community member?

Willingness to buy
Different researchers defined this variable as the reservation price (Kohli & Mahajan, 1991; Jedidi & Zhang, 2002; Hauser & Urban, 1986; Ariely, Loewenstein, & Prelec, 2003; Wang & Chatterjee, 2007). These researchers all define the reservation price different. These definitions all link to the probability that the consumer will purchase a product. Jedidi & Zhang, for example, define reservation price as the price when the consumer is indifferent between purchasing or not purchasing. These definitions, however, are focused on the willingness to pay of a consumer.

Purchase intention is another synonym of willingness to buy. Purchase intention is defined as a situation where transactions occur and a consumer is willing to make these transactions. The consumer in intending to make a transaction/purchase (Pavlou, 2003). It is related to whenever a consumer wants to make a purchase, is he or she willing to make this transaction?

Willingness to buy can be defined as followed, the tendency of a consumer towards the purchase of targeted products (Morrison, 1979). For example, is someone's willingness to buy a product from a foreign country different then whenever the product origins from their own country (Wang & Lamb, 1983). Is the consumer willing to purchase such a good? Moreover, the influence on the willingness to buy also differs between product categories. For example,

whenever the price changes of premium products the willingness to buy will probably not change negatively. However, the consumers' attitude towards these brands does have a large impact on the willingness to buy (Zielke & Dobbelstein, 2007). However, Kukar-Kinney et al. describe, that the willingness to buy and the price of a products have a negative relationship (Kukar-Kinney, Ridgway, & Monroe, 2012). This is more related to products of a different price range and do not include premium brands. Different aspects of product, services, etcetera have an influence on the willingness to buy of a consumer.

As discussed before consumer behaviour can be influenced by conformity in, for example, communities (Chen & Lu, 2015; Lascu & Zinkhan, 1999). Therefore, a consumers' willingness to buy can increase when it is supported by, for example, a streamer (Bartels & Onwezen, 2014). This means that the consumers' tendency to purchase that product will increase (Morrison, 1979). Besides, positive worth-of-mouth can also have a positive influence on the willingness to buy (Moran, Muzellec, & Nolan, 2014; Brown, Broderick, & Lee, 2007). Whenever positive worth-of-mouth occurs in a community the willingness to buy of a consumer towards the discussed product can increase.

Control variables

The researcher uses four different control variables in the linear regression that will be performed, namely age, gender, income and education level. These variables are shortly discussed. There can be a significant difference between different age groups, for example, towards organic food products (Wee, et al., 2014). Besides, other research also points out that age has a significant influence on the purchase intention (Imelia & Ruswanti, 2017). This variable is taken in to account, because there are many different age groups that take part in these communities. This also applies to the variable gender, because all genders play videogames (Greenberg, Sheryy, Lachlan, Lucas, & Holmstrom, 2010). Income is chosen because consumers with a higher income have a lower threshold when buying a product and, therefore, the willingness to buy is different from the start. People with a higher income tend to spend more than consumers with a lower income. (Casper, 2007) describes this in his paper about purchase intention of US citizens based on tennis players. Besides, (Imelia & Ruswanti, 2017) also find significant results of this variable towards purchase intention. Finally, education level is chosen because the education level of a consumer could determine the time the consumer invests in the community and gaming (Schutter, 2011). Besides, the researcher

expects that the survey respondents will contain of a great variety of education levels and, therefore, the researcher wants to control for this possible effect on the results.

Relation solidness of the community and the willingness to buy

The main effect of the conceptual model is the effect of the solidness of a community on the willingness to buy of a consumer or community member. Research points out that strong relationships can have a positive effect on the consumers' willingness to buy (Leonard-Barton, 1985). Solidness can be described in four parts, namely membership, influence, fulfilment of needs and emotional connection (Mcmillan & Chavis, 1986). The more solid a community is the higher the emotional connection is. This can lead to higher engagement, connection, loyalty, satisfaction, and so on (Brodie, Ilic, Juric, & Hollebeek, 2013). So, this leads to a stronger relationship which can have a positive influence on the willingness to buy. The stronger a relationship and the more solid a community the higher the willingness to buy towards a product might be. This relationship led to the following hypothesis:

H1: '*The solidness of a community of a videogame streamer has a positive significant influence on the willingness to buy of community members*'.

Relation solidness of the community and eWOM

Research points out that strong relationships can cause positive electronic Worth-of-Mouth and consumers with a good relationship tend to exchange a lot of information (Brown & Reingen, 1987). The more solid a community is the higher the relationships between the different community members are, because the connection between members increases (Mcmillan & Chavis, 1986). In conclusion, solid communities can cause a positive electronic Worth-of-Mouth which can be an explaining factor of the possible relationship between the solidness and the willingness to buy of a consumer (Brown, Broderick, & Lee, 2007; Hamilton, Garretson, & Kerne, 2014).

Relation solidness of the community and conformity

As described in the paragraph, solidness of the community, solidness consists of multiple components. Influence is a part of these components and this variable is strongly linked with conformity (Hamilton, Garretson, & Kerne, 2014). Conformity is described as followed, consumers copy other consumers' behaviour to be part of a group for example (Claidiere & Whiten, 2012). Consumers are influenced by other consumers in the group (Huang, Shi, &

Wang, 2012). It is described that the more solid a community the higher the influence of community members is. The more influence of community members the higher the conformity level is (Huang, Shi, & Wang, 2012). Communities and their solidness can cause a level of conformity which can lead to a positive effect on the willingness to buy of a community member (Brown, Broderick, & Lee, 2007; Hamilton, Garretson, & Kerne, 2014). So, the possible effect of the solidness of a community on the willingness to buy can, therefore, be explained by the level of conformity in the community.

Relation eWOM and the willingness to buy

Strong relationships can have a positive effect on the willingness to buy (Leonard-Barton, 1985). Research shows that strong relationship causes positive eWOM (Brown & Reingen, 1987). A research regarding the travelling industry showed that eWOM has a positive effect on the decision making or willingness to buy of a consumer (Hernández-Méndez, Muñoz-Leiva, & Sánchez-Fernández, 2015). Experiences of consumers tend to have a more reliable and trustworthy meaning than branded messages (Kozinets, Valck, Wojnicki, & Wilner, 2010). Hence, eWOM in communities can have an influence on the willingness to buy of consumer in the community (Moran, Muzellec, & Nolan, 2014). eWOM can be an explaining factor of the influence of the solidness of a community on the willingness to buy.

Relation conformity and the willingness to buy

Consumers conform to a groups norm when making a decision (Venkatesan, 1966). They conform to this groups norm to create a feeling that they are part of the group. Consumer behaviour is influenced by conformity. Moreover, social influences results in a change in the purchase intention (Chen & Lu, 2015; Lascu & Zinkhan, 1999). Purchase intention can be described as the willingness to buy of a consumer (Dodds, Monroe, & Grewal, 1991). So, the more conformity appears in a community, the higher the social influence and the more it has an influence on the willingness to buy. Moreover, the more solid a community is the higher the conformity level is (Huang, Shi, & Wang, 2012). Therefore, this might be the explaining factor of the influence of the solidness of a community on the willingness to buy.

These relationships between the mediating variables and both the independent and dependent variable led to the following hypotheses.

H2: '*The positive significant influence of the solidness of a community of a videogame streamer on the willingness to buy of community members is mediated by eWOM & conformity'*.

H2a: '*The positive significant influence of the solidness of a community of a videogame streamer on the willingness to buy of community members is mediated by eWOM'*.

H2b: '*The positive significant influence of the solidness of a community of a videogame streamer on the willingness to buy of community members is mediated by conformity'*.

2.2 Conceptual model

Conceptual model

The following conceptual model is drawn from the literature review (figure 1).
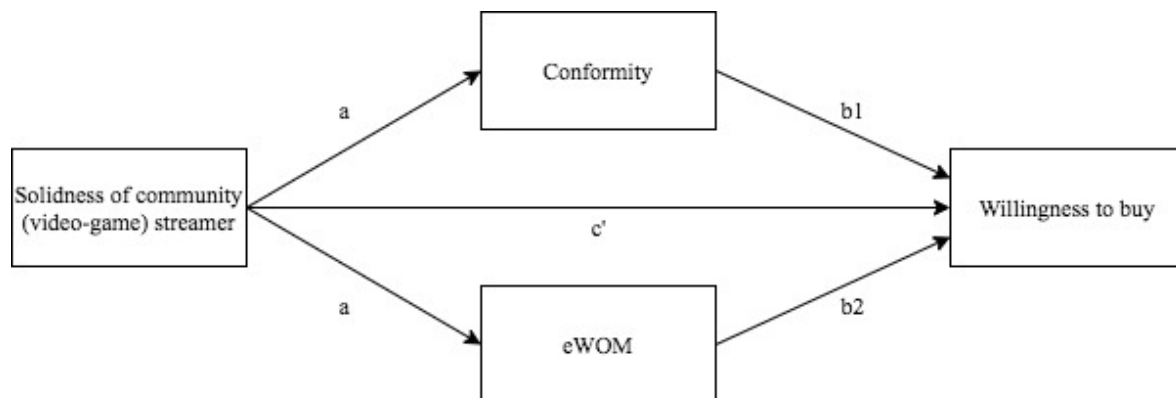
Figure 1; Conceptual model

The main effect shows a possible relation between the solidness of a community of a video game streamer and the willingness to buy of a consumer. The researcher takes in to account two mediators that might explain this possible main effect. The two mediators are eWOM (electronic Worth of Mouth) and conformity (both mediators are discussed in the literature review). Both, one or none of these mediators might explain the main effect, if this main effect occurs. The hypotheses that are drawn from the literature review and conceptual model are shortly discussed in the paragraphs above (§Relations between the different variables).

Chapter 3: Method

3.1 Survey

To test the hypotheses and the mediation effect of eWOM and conformity a survey is used. Gruen, Osmonbekov & Czaplewski used an online survey to investigate consumers. They mainly investigated the impact of eWOM on the customer value and loyalty (Gruen, Osmonbekov, & Czaplewski, 2006). Besides, Kim, Lee & Hiemstra also used an online survey to test the effect of an online virtual community on customer loyalty and travel product purchases (Kim, Lee, & Hiemstra, 2004). Many other researchers used this approach to study similar subjects (Park & Feinberg, 2010; Lin, Chiu, & Tsai, 2008; Hernández-Méndez, Muñoz-Leiva, & Sánchez-Fernández, 2015; Abubakar, Ilkan, & Sahin, 2016). The survey consists of 28 questions and 5 different subjects (table 24 in the Appendix). All variables are tested in this questionnaire. More on this is discussed in §3.3 Measurables.

3.2 Sampling

This study conducted a pre-test before testing the survey. This process resulted in a few changes before distributing the final research. This is discussed in §3.5 Pre-test. The questionnaire is distributed mainly on gaming community platform; Reddit.com. Surveys on this platform are allowed and even encouraged, responses on these surveys depend on the day and are relatively high (Reddit, 2019).

However, multiple biases could occur on this platform, such as, selection bias and refusal & problem of response bias. Lack of randomization on a singular platform is one of the mean reasons of these biases (Winship & Mare, 1992; Stanley, 1965). To eliminate these biases, the researcher will use multiple other online forums/ communities to distribute the survey. Moreover, these forums will consist of forums from different countries. The forums/communities used for the distribution of the survey are mentioned in table 23 of chapter 3 in the Appendix.

Research points out that a sample size of more than 50 should be sufficient for a linear regression analysis (Green, 1991). However, the researcher probably wants to perform a factor analysis to structure the data. Tabachnick & Fidell describe that 200 respondents are considered as fair and 300 as good (Tabachnick & Fidell, 2007). The researcher aims for a sample size between the 200 and 300. The distribution on the multiple forums and communities resulted in

298 usable respondents. However, 103 of these respondents do not belong to the target group. This is discussed in Chapter 4 §4.1 Data Description.

3.3 Measurables

Four main variables are measured in this study. Research points out different ways to test these variables, this review is described below this paragraph. The researcher chose to use a 5-point Likert-scale approach. For example, a question could be; I tend to buy products others recommend. The respondent should answer on a Likert-scale from 1 = strongly disagree to 5 = strongly agree. These variables are tested with 18 items. Besides, the researcher also tests some control variables, such as, age, gender, income and degree of education. These control variables are discussed in chapter 2 §Control variables. Together with some introduction questions, this accounts for 28 items. These items are shown in table 24 in Chapter 3 of the Appendix.

Willingness to buy

Many researchers describe different ways to test the willingness to buy. Wang & Lamb use a 5-point Likert-scale from extremely willing to extremely unwilling. These researchers use theorem, such as, 'what is your willingness to buy towards' (Wang & Lamb, 1983). A Likert scale can be described as an attitude scale. For example, from strongly disagree to strongly agree in a 5-point scale (Likert, 1932). Moreover, Bartels & Onwezen use a 5-point Likert-scale to investigate consumers' willingness to buy products with environmental and ethical claims. They use questions as, 'I buy products sooner, when supported by..', and so on (Bartels & Onwezen, 2014). Other researchers, such as Poushneh & Vasquez-Parraga use a 7-point Likert-scale to test their hypothesis on augmented reality and the willingness to buy. Questions are, for example, 'I intend to buy my products at a certain website' (Poushneh & Vasquez-Parraga, 2017). To test the variable willingness to buy, the researcher will use a Likert-scale. However, this Likert-scale can either be a 5-point, 7-point, 11-point, and so on. Besides, how many items should be tested to test the willingness to buy. These papers use, respectively, 36 (this research is divided under 36 countries), 6 & 3 items for their research. To research willingness to buy in this research, 4 items will be used (Wang & Lamb, 1983; Bartels & Onwezen, 2014; Poushneh & Vasquez-Parraga, 2017).

eWOM

In this paragraph, research on how (electronic) Worth-of-Mouth is researched is analysed. A research about online gaming communities and eWOM, a questionnaire is used with a 5-point Likert-scale (1 = strongly disagree & 5 = strongly agree). Besides, a research paper about behavioural consequences of service quality uses a 7-point Likert-scale with similar questions. These questions are, for example, 'recommending products to someone who seeks advice', 'say positive things about a certain product', 'encourage friends and family to do business with a certain company' (Liao, Wu, Widowati, & Chen, 2012; Zeithaml, Berry, & Parasuraman, 1996). Gruen, et al. use a 7-point Likert-scale to investigate eWOM, they also use questions around recommending products to potential users (Gruen, Osmonbekov, & Czaplewski, 2006). A research towards referrals and eWOM in communities uses a different kind of approach. Statements, such as, 'to make sure I buy the right product, I read consumers' online reviews' were shown and the respondent was asked to answer them in a 5-point Likert-scale (Abubakar, Ilkan, & Sahin, 2016). These papers use, respectively, 3, 4, 2 & 6 items for their research. To research eWOM in this research, 4 items will be used (Liao, Wu, Widowati, & Chen, 2012; Zeithaml, Berry, & Parasuraman, 1996; Gruen, Osmonbekov, & Czaplewski, 2006; Abubakar, Ilkan, & Sahin, 2016).

Conformity

Conformity is researched as followed in different research papers. Park & Feinberg divide conformity in informational and normative consumer conformity. Normative conformity can be explained by self-esteem and involvement. Informational conformity as sense of belongingness and community expertise. The researchers investigate conformity with a 7-point Likert-scale and different questions/statements. Examples: 'I often buy products that other member's buy', 'I buy products that I think the community would approve of', 'I buy products that make me look good in a virtual community', and so on (Park & Feinberg, 2010). In a research dedicated to the mediating effect of conformity on e-compulsive buying, the researcher conducted an online survey. To investigate this mediating effect, they used multiple questions regarding conformity. Question they used, for example, 'a community member often consults with the virtual community before making a decision', 'I often try to buy products other community members buy', 'I often ask the community for advice before buying a product', and so on (Lee & Park, 2008). The researcher likely used a Likert-scale to test this, but no indication is given. A third research investigates conformity consumption behaviour.

Kang, Ciu & Son used a 5-point Likert-scale for questions regarding conformity. Examples of questions are: 'I observe what other buy before buying myself', 'I buy products that other approve of' & 'I gather information by friend & family before buying' (Kang, Cui, & Son, 2019). Moreover, in a research paper about the measurement of consumer susceptibility similar questions and measurements are described. Most researchers described above based their question somehow on this paper. In this paper, a 7-point Likert-scale and 12-points are used (4 for informational and 8 for normative conformity) (Bearden, Netemeyer, & Teel, 1989). These papers use, respectively, 18 (divided in normative, informational and general), 12, 3 & 12 items for their research. To research conformity in this research, 4 items will be used (Park & Feinberg, 2010; Lee & Park, 2008; Kang, Cui, & Son, 2019; Bearden, Netemeyer, & Teel, 1989).

Solidness of a community

Communities and their solidness is investigated by multiple researchers, these different approaches are analysed and a conclusion for this research is drawn. Kim, et al. investigated the behaviour of community members in a travel community. They used an online survey with multiple questions regarding this community. For example, questions about the influence and interrelatedness of the community. Besides, questions about the shared emotional connection. These questions are all measured in a 5-point Likert-scale, from strongly disagree to strongly agree (Kim, Lee, & Hiemstra, 2004). Another research paper also uses the member's commitment, community's commitment, connections between the members, and so on. These topics where tested on a 7-point Likert-scale (Preece, Abras, & Maloney-Krichmar, 2004). A combination of these questions used in these papers are used for the survey in this research. Moreover, researchers, Lin, Chiu and Tsai, modelled the relationship between quality and consumer loyalty in virtual communities. They used subjects as loyalty, satisfaction and commitment with respectively 6, 5 and 4 items. All items were tested with a 5-point Likert-scale (Lin, Chiu, & Tsai, 2008). Besides, a research about the sense of virtual communities uses questions regarding offline activities and the playfulness for example (Koh & Kim, 2003). Different research papers show that, membership, influence (need for conformity), integration & fulfilment of needs and shared emotional connections are the most important parts of communities (Blanchard & Markus, 2004). These papers use, respectively, 16, 17 & 15 items for their research. To research the solidness of a community in this research, 4 items will be

used (Kim, Lee, & Hiemstra, 2004; Preece, Abras, & Maloney-Krichmar, 2004; Lin, Chiu, & Tsai, 2008).

3.4 Economic model

The researcher uses a linear regression model to analyse the four variables, because all variables are continuous variables measured on a Likert-scale. To test the mediation, the stepwise approach of Baron and Kenny is used (Baron & Kenny, 1986). This model contains of three steps, the first step is the direct effect that should occur before a mediation analysis can be performed. The second step is to analyse whether the independent variable has a significant effect on the mediating variable. Whenever these relationships are both significant, both the mediating and independent variable can be regressed on the dependent variable (step 3). Because this paper investigates multiple mediation variables these variables are divided in different models. This approach is shown in the economic model below.

Step 1 (Dependent and Independent variables, direct effect):
$$WTB = \beta 0 + \beta 1 Solidness + \beta 2 Age + \beta 3 Gender + \beta 4 Education + \beta 5 Income + \varepsilon$$

Step 2 (Mediators and Independent variables):
$$eWOM = \beta 0 + \beta 1 Solidness + \beta 2 Age + \beta 3 Gender + \beta 4 Education + \beta 5 Income + \varepsilon$$
$$Conformity = \beta 0 + \beta 1 Solidness + \beta 2 Age + \beta 3 Gender + \beta 4 Education + \beta 5 Income + \varepsilon$$

Step 3:
$$WTB = \beta 0 + \beta 1 Solidness + \beta 2 eWOM + \beta 3 Age + \beta 4 Gender + \beta 5 Education + \beta 6 Income + \varepsilon$$
$$WTB = \beta 0 + \beta 1 Solidness + \beta 2 Conformity + \beta 3 Age + \beta 4 Gender + \beta 5 Education + \beta 6 Income + \varepsilon$$

3.5 Pre-test

A pre-test has been performed to test whether the results are valid and usable for the main research. Besides, last changes in overall problems can be made after the pre-test. The pre-test was distributed on Facebook and this resulted in 18 respondents with 12 usable responses, because six of the respondents indicated that they do not feel that they belong to an online

gaming (livestream) community. To avoid so many invalid responses, the main test will be distributed on mainly gaming channels, such as Reddit.com and Gaming & Livestream groups. There are no respondents who did not finish the pre-test, what shows that the survey was clear to every respondent. A few textual changes were made after the analysis of the pre-test (feedback of multiple respondents resulted in these insights). Besides, multiple respondents gave feedback on the control questions; 'what is your age' & 'what is your year of birth'. These questions were meant as control questions to make sure every respondent read the questions carefully. However, the opinion of the respondents was overall that this led to confusion and irritation. The question: 'what is your year of birth' has been deleted from the questionnaire.

Chapter 4: Results

In this chapter, the results are analysed that resulted from the online survey. First, the data will be inspected on irregularity, missing variables and other outliers. Second, the characteristics of the data will be analysed and discussed. Furthermore, the factor analysis that is conducted will be described. The Cronbach's alpha will be discussed to ensure the reliability of the data. Before an analysis can be performed a few assumptions should be made. Finally, the results of the regression analysis and mediation analysis are described (with all the control variables). The reader should keep in mind that the researcher will use an alpha of 0.05 ($\alpha = 0.05$).

4.1 Data description

As discussed, this survey is distributed on multiple online forums and other gaming communities. This distribution led to 391 respondents on the survey. However, 38 respondents that were recorded are empty. These are respondents that opened the survey and directly closed it, Qualtrics recorded these 'error' responses. Besides, 55 respondents never finished the survey. This results in 298 usable respondents. However, this paper investigates online gaming communities. That's why, question 6, was as followed: 'Do you consider yourself a member of an online (video game) streaming community?'. This question results in that only the right target group of this research is investigated. 103 respondents answered 'no' at question 6, which results in N = 195.

The data set consists for 61.5% (N=120) out of men and 35.9% (N=70) women. 2.6% or N=5 respondents chose 'other'. The youngest participants of this survey were between the age of 11

and 15 with 3.6% (N=7). The biggest group is 21 – 25 with 46.7% (N=91). Other important big groups are 16 – 20 with 12.3% (N=24) and 26 – 30 with 22.1% (N=43). These tables can be found in Chapter 4 of the Appendix, tables 25 & 26.

The education level of the response group is divided, but there are two groups that stand out as the biggest. Namely, 36.4% of the respondents has a bachelor's degree (N=71) and 25.1% a master's degree (N=49) or is currently studying at this level. Results show that most of the respondents have an annual income of less than $10,000. 48.2% earns less than $10,000 a year (N=94). This is probably associated with the high number of young people that took part at this survey. Tables regarding the education level and annual income can be found in chapter 4 of the appendix (tables 27 & 28).

Lastly, the nationality of the respondents was questioned. Most of the respondents were naturally Dutch (N=72). However, this research touches the international side with American (N=20), Belgian (N=15), British (N=13) and German (N=16). Besides, there are a lot of other nationalities that answered this survey. Results are shown in table 29 in the Appendix.

4.2 Factor analysis

Before all the data is analysed, the researcher uses the factor analysis to reduce the number of items used to measure the variables. The factor analysis is an analysis were the researcher reduces the number of items and divides them in to different factors. This analysis is only an intermediate step and not the final analysis (Thompson, 2004; Suhr D. D., 2013). The researcher uses a principal component factor analysis based on an Eigenvalue higher than 1 (Kaiser, 1960; Patil, Singh, Mishra, & Donovan, 2008). Besides, a scree plot is used to confirm the analysis of the Eigenvalue (Cattel, 1966). Moreover, Tabachnick and Fiddell describe what rotation the researcher needs to use. They describe that the researcher should start with an oblique rotation (promax or oblimin), whenever the factor correlation matrix points out a correlation higher than 0.32, the researcher should use this rotation (Tabachnick & Fidell, 2007). This resulted in that the varimax rotation is used for the 'solidness of the community' variables and the direct oblimin rotation for the 'willingness to buy' variable (as shown in tables 30 & 31 in Chapter 4 of the Appendix). The 'conformity' and 'eWOM' variables do not require rotation, because the factor analysis only resulted in one factor.

A few assumptions are necessary before starting the factor analysis. The first assumption is that all variables should be an interval/ratio variable. All variables are Likert scale variables; therefore, all variables can be considered scale variables. Besides, they should use the same measurement units. All variables are tested on a 5-point Likert-scale. Finally, the rule of thumb for sufficient degrees of freedom is 10 per variable and a minimum of 100 observations (Thompson, 2004; Gorsuch, 1983; Hair, Anderson, Tatham, & Black, 1995; Suhr D. D., 2006). This assumption is met because for a factor analysis with 5 items (or independent variables) the researcher needs 5x5 = 25, but with a minimum of 100. 195 respondents are used with this factor analysis and, therefore, this assumption is not violated.

Moreover, before the factor analysis can be performed a Pearson correlation matrix should point out whether the items for one construct are usable for a factor analysis. Pearson correlation is used because the researcher is investigating the correlation between continuous variables (Schober, Boer, & Schwarte, 2018). Pearson correlation is used to test whether there are irrelevant items that might can be deleted for measuring one variable. This matrix tests a certain correlation between the variables. Four different matrices have been analysed, for all the different variables. These tables can be found in Chapter 4 of the Appendix (tables 32 - 35). This analysis shows that almost every single question per variable is significant correlated with each other, because all correlations are above the 0.30 rule of thumb. However, two questions are not significant correlated with each other. Namely, 'similar interests' and 'able to ask questions'. These questions are, however, significant correlated with the other questions regarding this variable (solidness). Moreover, research shows that these questions are relevant for the analysis and, therefore, the researcher chooses to use these items for the analysis (Preece, Abras, & Maloney-Krichmar, 2004; Kim, Lee, & Hiemstra, 2004). In conclusion, all variables are tested and ready for the factor analysis.

First, the solidness of the community. The tables & figures below the text show all results of the factor analysis per variable (table 1 – 3 & figure 2). This variable is tested with a varimax rotation as discussed before. To test the adequacy, the KMO and Bartlett's test is used (Dziuban & Shirkey, 1974). As shown in table 1 below, the KMO is 0.662 which is higher than the desired 0.5 (or even 0.6). Besides, Bartlett's test gave a significance of 0.000 which is considered significant with $\alpha = 0.05$. The factor analysis resulted in two factors with an Eigenvalue higher than 1. As can be seen in table 2 and figure 2 below. The rotated component

matrix shows to which factor a question belongs (table 3 below). The factors are divided as followed:

Factor 1 → Overall connection community → 'Connection to other members', 'Similar interests' & 'Participation in community events'.

Factor 2 → Secure environment community → 'Able to ask questions in secure environment' & 'Opportunity to suggest ideas'.

Table 1; KMO & Bartlett's (Solidness)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.662
Bartlett's Test of Sphericity	Approx. Chi-Square	141.402
	df	10
	Sig.	.000

Table 2; Total variance explained (Eigenvalue) (Solidness)

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.118	42.364	42.364	2.118	42.364	42.364	1.649	32.975	32.975
2	1.071	21.414	63.779	1.071	21.414	63.779	1.540	30.803	63.779
3	.715	14.300	78.079						
4	.623	12.464	90.543						
5	.473	9.457	100.000						
Extraction Method: Principal Component Analysis.									
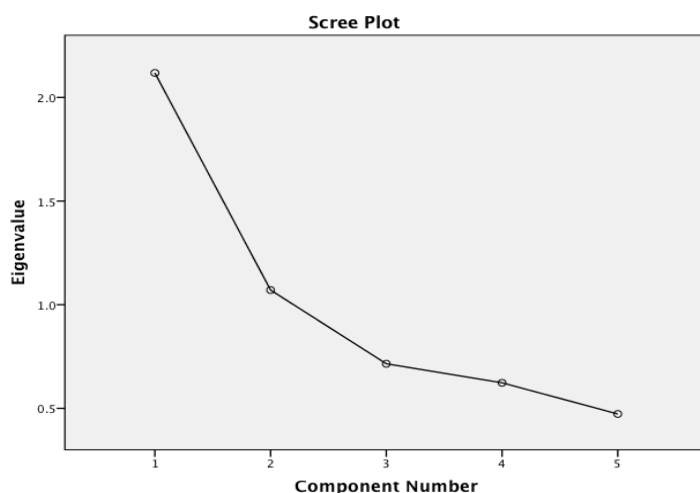
Figure 2; Scree plot (Solidness)

Rotated Component Matrix^a

	Component	
	1	2
Connection to other members or streamer	*.774*	
Interests similar to the rest of the community	*.772*	
Participation community events	*.650*	.334
Able to ask questions (secure environment)		*.841*
Opportunity to suggest ideas		*.838*
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Second, the variable eWOM. No rotation is used for this variable, because the factor analysis only resulted in one factor. KMO's test resulted in 0.632 what is higher than desired. Moreover, Bartlett's test resulted again in a significance of 0.000, what is lower than $\alpha = 0.05$ (table 4). As shown in table 5 & figure 3, this factor analysis resulted in 1 factor. Therefore, this factor will be called eWOM and all four questions regarding eWOM will fall under this factor. The component matrix shown below shows that all questions belong to one factor (table 6).

Table 4; KMO & Bartlett's (eWOM)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.632
Bartlett's Test of Sphericity	Approx. Chi-Square	432.685
	df	6
	Sig.	.000

Table 5; Total variance explained (Eigenvalue) (eWOM)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.668	66.692	66.692	2.668	66.692	66.692
2	.908	22.709	89.401			
3	.253	6.324	95.725			
4	.171	4.275	100.000			
Extraction Method: Principal Component Analysis.						
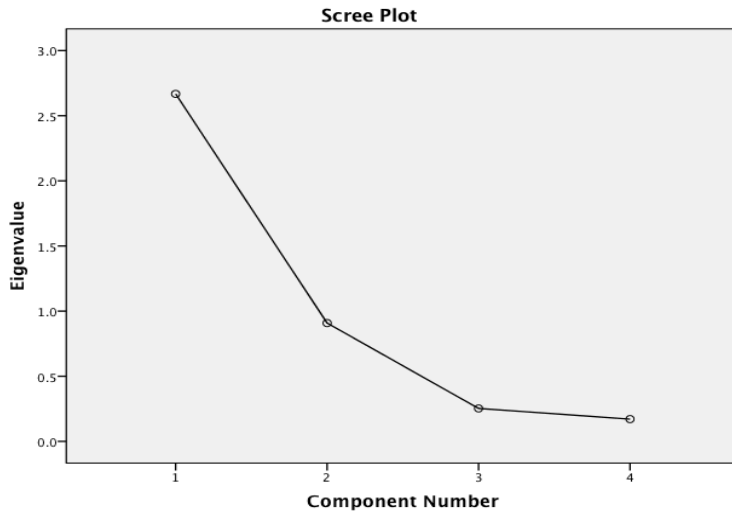
Figure 3; Scree plot (eWOM)

Table 6; Component matrix (eWOM)

Component Matrix[a]	
	Component
	1
Community members recommend products	.837
I say positive things about a product	.820
Community members say positive things about a product	.819
I recommend products	.790
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Third, conformity. This variable also does not require a rotation, because the factor analysis only resulted in to 1 factor. KMO & Bartlett's test can be found in table 7, this analysis shows a KMO of 0.741 what is more than sufficient and Bartlett's test shows sig. 0.000 what is $< \alpha = 0.05$. This factor analysis resulted in 1 factor as can be seen in table 8 & figure 4 below. The Eigenvalue of factor 1 is higher than 1 (2.538). Therefore, all questions regarding conformity will fall under one factor named: conformity. The component matrix with the factor loadings is shown below (table 9).

Table 7; KMO & Bartlett's (Conformity)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.741
Bartlett's Test of Sphericity	Approx. Chi-Square	268.224
	df	6
	Sig.	.000

Table 8; Total variance explained (Eigenvalue) (Conformity)

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.538	63.452	63.452	2.538	63.452	63.452
2	.684	17.097	80.549			
3	.484	12.098	92.648			
4	.294	7.352	100.000			
Extraction Method: Principal Component Analysis.						
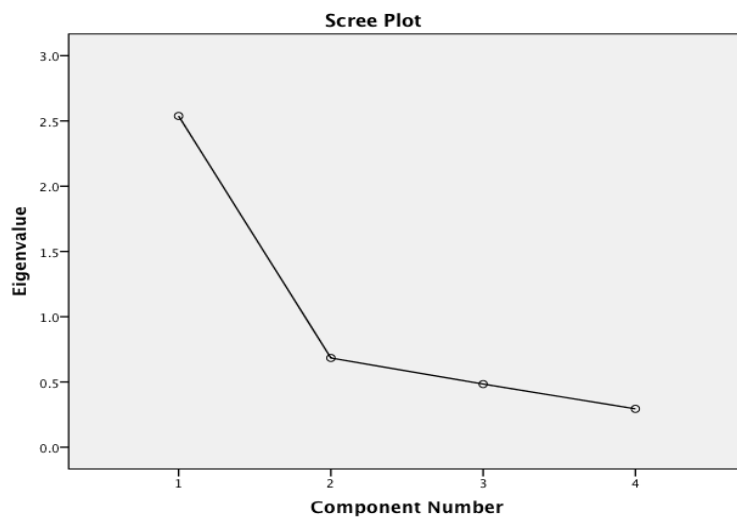
Scree Plot

Figure 4; Scree plot (Conformity)

Table 9; Component matrix (Conformity)

Component Matrix[a]	Component
	1
I buy products streamers recommend	.846
I buy products sponsored by a streamer	.831
I buy products other members in the community buy and/or recommend	.791
I consult in the community before buying a product	.712
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Finally, the factor analysis for the willingness to buy is ran. This resulted in to two factors. The oblimin rotation is used for this factor as discussed above. KMO's test resulted in to 0.748 and Bartlett's test gave a significance of 0.000 ($< \alpha = 0.05$). This is shown in table 10 below. This analysis resulted in two factors, because there are two factors with an Eigenvalue higher than

1 (table 11 & figure 5). The matrix in table 12 below shows what questions belong to which factor. The questions are divided as followed:

Factor 1 → WTB worth-of-mouth → 'When experiences are shared', 'When products is approved' & 'When product is mentioned positively'.

Factor 2 → WTB conformity → 'When sponsored by streamer' & 'When supported by a streamer'.

Table 10; KMO & Bartlett's (WTB)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.748
Bartlett's Test of Sphericity	Approx. Chi-Square	469.028
	df	10
	Sig.	.000

Table 11; Total variance explained (Eigenvalue) (WTB)

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.062	61.244	61.244	3.062	61.244	61.244	2.784
2	1.005	20.098	81.342	1.005	20.098	81.342	2.186
3	.404	8.078	89.420				
4	.286	5.725	95.146				
5	.243	4.854	100.000				
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							
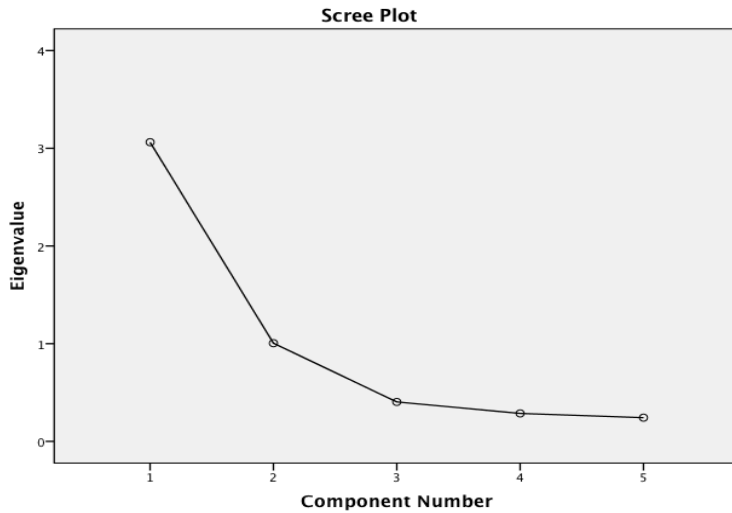
Figure 5; Scree plot (WTB)

Table 12; Rotated component matrix (WTB)

Structure Matrix		
	Component	
	1	2
My WTB is higher when other members shared experiences	*.902*	.393
My WTB is higher when product is mentioned positively	*.893*	.476
My WTB is higher when community approves of it	*.889*	.394
My WTB is higher when a streamer sponsored it	.374	*.917*
My WTB is higher when supported by a streamer	.493	*.900*
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.		

4.3 Cronbach's alpha

The Cronbach's alpha tests the internal consistency of the variables. This means that when a factor is consistent, the respondents have the same answer patterns for every question in the factor. The Cronbach's alpha will be discussed per variable and per factor. The rule of thumb is $\alpha > 0.70$ for acceptable internal consistency and > 0.80 is considered as good (Cronbach, 1951; Bland & Altman, 1997). However, between 0.60 and 0.70 can be considered questionable but not unusable (George & Mallery, 2003; Gliem & Gliem, 2003). The results of these reliability analyses can be found in table 13 below.

The variable of 'solidness of the community' is divided in to two factors, namely 'overall connection community' & 'secure environment community'. This means two Cronbach's alphas should be tested. Results for the factors 'overall connection community' & 'secure

29

environment community' are, respectively, 0.610 & 0.643. These numbers are considered questionable and, therefore, the internal consistency of these factors is questionable as well. However, they are not poor and therefore not unusable.

Second, the analysis of the 'eWOM' factor. This result shows an α of 0.833 what is considered good. In conclusion, the factor of eWOM can be considered internal consistent.

Third, table 13 also shows the Cronbach's alpha of the factor conformity. This analysis resulted in an α of 0.806. This α is considered as good and, therefore, this factor is internal consistent.

Finally, the variable of 'willingness to buy'. This variable is divided in to two factors, namely 'WTB worth-of-mouth' & 'WTB conformity'. These factors were individually tested on internal consistency with the Cronbach's alpha. The alphas of 'WTB worth-of-mouth' and 'WTB conformity' are, respectively, 0.876 & 0.789. These alphas are both considered as acceptable and, therefore, these factors are considered internal consistent.

Table 13; Reliability analysis all factors (Cronbach's Alpha)

Reliability statistics			
Factors	Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
Overall connection community	0.601	0.610	3
Secure environment community	0.642	0.643	2
eWOM	0.827	0.833	4
Conformity	0.805	0.806	4
Willingness to buy eWOM	0.875	0.876	3
Willingness to buy conformity	0.789	0.789	2

In conclusion, all but two factors are considered good or acceptable. The variables eWOM, conformity and willingness to buy all have factors that are internally consistent. However, the variable solidness of the community has factors from which the internal consistency is questionable. This should be kept in mind when discussing the results and must be considered a limitation of this research.

4.4 Assumptions

This part discusses the assumptions the researcher needs to make before a linear regression analysis and mediation analysis can be performed.

Linear regression

To perform a linear regression analysis on the data, a few assumptions should be made. This part will describe and discuss these assumptions. The assumptions that will be discussed are: all variables are quantitative, there is a linear function, the residues are normally distributed, the variance is constant (homoscedasticity) and the independent variables are not highly correlated with each other (multicollinearity) (Siero, Huisman, & Kiers, 2009; Field, 2009).

First, all variables (independent and dependent) should be quantitative variables to perform a linear regression analysis. All variables are tested with an online survey and are questioned in the form of a 5-point Likert-scale. Therefore, all variables are on an interval scale. Interval scales are considered quantitative.

Second, the researcher should do a check for a linear function between the independent and dependent variables. All linear functions are tested with the use of scatterplots and are shown in figures 6 – 9. These figures show that this assumption is not violated, however, it shows that the linear relationships are weak.

The next assumption is whether the dependent variables are normally distributed. This assumption is checked using the Shapiro-Wilk and Kolmogorov-Smirnov test (Shapiro & Wilk, 1965; Kolmogorov, 1933). Besides, the skewness and kurtosis are analysed for both dependent factors (Field, 2009). These results can be found in tables 36 & 37 in the Appendix. Results show that both tests are $< \alpha = 0.05$ (0.000) and, therefore, the variables are not normally distributed. Besides, the skewness and kurtosis also show that the data is not normally distributed because they are not between -1.96 and +1.96. However, the sample size is big (N=195) causing that, because of the 'central limit theorem', the data is normally distributed. The 'central limit theorem' states that with a large sample size (> 30) the data can be considered normally distributed (Field, 2009). It is, therefore, right to use a parametric test, because with the use of non-parametric test all assumptions will be dropped and therefore will be less efficient.

The variance of the factor should be constant, homoscedasticity. This means that the variance of the error terms should be constant on each level of the independent variables. Figures 10 & 11 shows two P-P Plots that show that both independent variables meet this assumption as well, because all dots are close to the line.

Last, the independent variables are not highly correlated with each other, multicollinearity. The independent variable, solidness of the community, is divided in to two factors and therefore these factors are tested on multicollinearity. To test this multicollinearity, the researcher takes the VIF-score. Researchers describe multiple rule-of-thumb VIF-scores, such as above 10 and even above 1 could bias the regression model (Myers, 1990; Bowerman & O'Connell; Field, 2009). Tables 38 & 39 show that for both, 'overall connection community' and 'secure environment community', the VIF-score is 1.000. This means there is no concerning multicollinearity that might bias the regression model.

In conclusion, all assumptions are analysed and accounted for. This results in that the next step can be taken, namely the linear regression.

Mediation (assumptions)

A few assumptions should be made before a mediation analysis can take place. The researcher discussed above that the main effect should occur before a mediation analysis can be performed, which is logical because there should be an effect before this effect can be explained.

This paper investigates two different mediating variables and, therefore, the researcher should perform a Pearson correlation to analyse whether these variables are correlated with each other. Whenever these mediating variables are highly correlated with each other, multicollinearity could occur when performing a mediating analysis. As shown in table 14 below, the two mediating variables are significantly correlated with each other. This means that, whenever, these variables are analysed in one mediating analysis multicollinearity could occur. Therefore, the researcher chooses to divide these mediating variables in two different analyses to avoid the possibility of multicollinearity.

Table 14; Pearson correlation (mediating variables)

Pearson Correlation			
		eWOM factor	Conformity factor
eWOM factor	Pearson Correlation	1	.448[**]
	Sig. (2-tailed)		.000
	N	195	195
Conformity factor	Pearson Correlation	.448[**]	1
	Sig. (2-tailed)	.000	
	N	195	195
**. Correlation is significant at the 0.01 level (2-tailed).			

In conclusion, a mediation analysis can be performed. However, the researcher must perform separate mediation analyses to avoid multicollinearity. Chapter 3 §Economic model shows that the researcher investigates the mediators separate. This economic model is used to give structure to the analysis.

4.5 Linear regression

This analysis is divided in to two parts, namely the direct and mediation effects. First, the direct effects should be justified to analyse the mediation effect, because the main effect should occur before this effect can be explained. A linear regression is used with the following control variables: age, gender, education and income.

Direct effects

The analysis of the direct effect is also divided in to two sections, because the dependent (and independent) variables are divided in two factors. The first linear regression is analysed on the first dependent factor 'willingness to buy eWOM' and both independent variables (overall connection community & secure environment community) including the four control variables. The results of the linear regression can be found in table 15 below. The results show that the overall model is significant. Besides, the analysis shows that the independent factor 'overall connection community' has a positive significant effect on the 'willingness to buy eWOM' factor (B = 0.225, Sig. = 0.001). Moreover, the independent factor 'secure environment community' also has a positive significant effect on this dependent factor (B = 0.273, Sig. = 0.000). The second independent factor has a bigger impact on the dependent factor.

The second linear regression is analysed on the second dependent factor 'willingness to buy conformity' with the independent variables and control variables. These results are shown in the second part of table 15 below. These results show that the entire model is significant. Besides, the relationship between 'overall connection community' and 'willingness to buy conformity' is again positively significant (B = 0.311, Sig. = 0.000). However, the second independent factor (secure environment community) has no significant impact on the willingness to buy conformity (Sig. = 0.747).

Table 15; Linear regression

Variables	Model 1 Willingness to buy eWOM				Model 2 Willingness to buy conformity			
Dependent variable	Understandardized coefficients		Standardized coefficients		Understandardized coefficients		Standardized coefficients	
	B	Std. Error	Beta	t	B	Std. Error	Beta	t
Constant	0.353	0.33		1.071	(0.176)	0.326		(0.540)
Overall connection community	0.225***	0.069	0.225	3.266	0.311***	0.068	0.311	4.584
Secure environment community	0.273***	0.069	0.273	3.938	0.022	0.069	0.022	0.324
Age	(0.107)	0.07	(0.145)	-1.532	0.054	0.069	0.073	0.779
Gender	(0.030)	0.129	(0.016)	(0.231)	(0.078)	0.127	(0.042)	(0.609)
Education	0.007	0.033	0.015	0.215	0.061*	0.033	0.133	1.859
Income	0.060	0.065	0.084	0.917	(0.142)	0.064	(0.199)	-2.204
N	195				195			
R2	0.127				0.148			
Adjusted R2	0.100				0.121			

*** p < 0.01, ** p < 0.05, * p < 0.1

In conclusion, the results show that the total direct effect between solidness of the community and the willingness to buy does not occur. The main effect contains of two variables, an independent and dependent variable. These variables are divided in to two factors and this resulted in different linear regression analyses and different results. The main effect does not occur because the independent factor 'secure environment community' does not have a positive significant effect on the dependent factor 'willingness to buy conformity'. Therefore, H1 can be rejected because the main effect does not completely occur. However, as can be seen in the results, parts of this main effect do occur. The independent factor 'overall connection community' does have a positive significant effect on both dependent factors, 'willingness to buy eWOM' and 'willingness to buy conformity'. Besides, the factor 'secure environment community' also has a positive significant effect on the 'willingness to buy eWOM'. So, the main effect between the solidness of the community and the willingness to buy does not completely occur because the effect between two factors is insignificant. Therefore, H1 is rejected.

Mediation effects

To test the other hypotheses, a mediation analysis is used. The two mediating variables that are investigated are divided in to different analyses to avoid multicollinearity as discussed in Chapter 4 §Assumptions mediation analysis. Furthermore, the mediating analyses are divided in to six parts, because the independent and dependent variables are divided in to multiple factors. Besides, as can be seen in the previous paragraph, the relationship between 'secure environment community' and 'willingness to buy conformity' is not significant. Therefore, it is not possible to test a mediation, because as mentioned earlier a main effect should occur before a mediator can be an explaining factor. The mediating variables that will be added are 'eWOM' and 'conformity'.

First, the mediating variables are both tested for the positive effect of 'overall connection community' on the 'willingness to buy eWOM'. Results of these mediation analyses are shown in tables 16 & 17 below. A mediation can be considered significant when the confidence interval does not include 0. As shown in table 16 below, the LLCI of the indirect effect is 0.0715 and the ULCI is 0.2402 what means that eWOM positively mediates the effect between 'overall connection community' and 'willingness to buy eWOM'. Besides, the mediation analysis of the mediating variable conformity on these factors can be found in table 17 below. This analysis also concludes that conformity positively mediates the effect between the factors 'overall connection community' and 'willingness to buy eWOM', because the LLCI of the indirect effect is 0.1252 and the ULCI is 0.2904. In conclusion, both mediating variables positively mediate the effect between these two factors (overall connection community and willingness to buy eWOM). As can be seen in the tables below, the direct effect of both mediation analysis is insignificant what means that the total direct effect is entirely explained by the mediating variables, full mediation. This means that the variable overall connection community influences willingness to buy through the two mediating variables (eWOM & conformity).

Table 16; Mediation analysis 1 (eWOM on WTBeWOM & Overall connection community)

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.2266	.0714	3.1753	.0017	.0858	.3674
Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.0775	.0627	1.2360	.2180	-.0462	.2013
Indirect effect(s) of X on Y					
	Effect	BootSE	BootLLCI	BootULCI	

eWOM	.1491	.0425	*.0715*	*.2402*

Table 17; Mediation analysis 2 (conformity on WTBeWOM & Overall connection community)

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.2266	.0714	3.1753	.0017	.0858	.3674
Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.0223	.0662	.3368	.7367	-.1083	.1529
Indirect effect(s) of X on Y					
	Effect	BootSE	BootLLCI	BootULCI	
Conformity	.2043	.0418	*.1252*	*.2904*	

Second, the mediating variables are both tested again with the independent factor 'overall connection community, however, now with the other dependent factor: 'willingness to buy conformity'. The results of these mediation analyses can be found in tables 18 & 19 below. The variable, eWOM, does not mediate the effect between 'overall connection community' and 'willingness to buy conformity', because as shown in table 18 below the LLCI is -0.0142 and the ULCI is 0.0739. This means that the indirect (mediating) effect is insignificant. However, the variable conformity does mediate the direct effect positively. Table 19 shows that the LLCI is 0.1451 and the ULCI is 0.3220 this means that this indirect effect is significant. Therefore, conformity positively mediates the effect between 'overall connection community' and 'willingness to buy conformity'. Besides, the table shows that the direct effect is insignificant what means that full mediation occurs. This means that the independent factor influences the dependent factor entirely through conformity.

Table 18; Mediation analysis 3 (eWOM on WTBconformity & Overall connection community)

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.3116	.0678	4.5972	.0000	.1779	.4453
Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.2855	.0703	4.0615	.0001	.1468	.4241
Indirect effect(s) of X on Y					
	Effect	BootSE	BootLLCI	BootULCI	
eWOM	.0262	.0220	*-.0142*	*.0739*	

Table 19; Mediation analysis 4 (conformity on WTBconformity & Overall connection community)

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.3116	.0678	4.5972	.0000	.1779	.4453
Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI

.0819	.0582	1.4088	.1605	-.0328	.1967
Indirect effect(s) of X on Y					
	Effect	BootSE	BootLLCI	BootULCI	
Conformity	.2297	.0450	*.1451*	*.3220*	

Finally, the variables eWOM and conformity are also tested on the direct effect between 'secure environment community' and 'willingness to buy eWOM'. As discussed, the variables are not tested on the 'WTB conformity' and 'secure environment community' because this main effect is insignificant. Tables 20 & 21 below show the results of these mediation analyses. As shown in table 20 below the LLCI of the first mediating variable (eWOM) is 0.0634 and the ULCI is 0.2298 what means that eWOM positively mediates the effect between 'secure environment community' and 'willingness to buy eWOM'. However, the other variable conformity does not positively mediate the direct effect because the LLCI is -0.0119 and the ULCI is 0.1442 (table 21). This means that this mediating effect is insignificant. In conclusion, the variable eWOM does positively mediate the effect between 'secure environment community' and 'willingness to buy eWOM' and conformity does not. The previous mediation analyses were all full mediation what meant that the direct effect is entirely explained by the mediating variables, however, as can be seen in the table below the direct effect of the first mediation analysis (table 20) is significant. This means that the researcher must perform another analysis to analyse how many of the direct effect is explained by the mediator eWOM. The results of this analysis are shown in table 22 below. These results show that the indirect effect of path Ind1 is 0.0973, what means that the path from 'secure environment community' to 'eWOM' to 'willingness to buy eWOM' is 9.73%. So, the mediating variable eWOM explains 9.73% of this direct effect.

Table 20; Mediation analysis 5 (eWOM on WTBeWOM & Secure environment community)

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.2749	.0711	3.8645	.0002	.1346	.4153
Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.1326	.0627	2.1156	.0357	.0090	.2562
Indirect effect(s) of X on Y					
	Effect	BootSE	BootLLCI	BootULCI	
eWOM	.1424	.0430	*.0634*	*.2298*	

Table 21; Mediation analysis 6 (conformity on WTBeWOM & Secure environment community)

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.2749	.0711	3.8645	.0002	.1346	.4153
Direct effect of X on Y					

Effect	se	t	p	LLCI	ULCI
.2112	.0604	3.4939	.0006	.0920	.3304
Indirect effect(s) of X on Y					
	Effect	BootSE	BootLLCI	BootULCI	
Conformity	.0638	.0399	*-.0119*	*.1442*	

Table 22; Mediation analysis total indirect effect mediators (eWOM on WTBeWOM & Secure environment community)

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.2749	.0711	3.8645	.0002	.1346	.4153
Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.1329	.0575	2.3096	.0220	.0194	.2464
Indirect effect(s) of X on Y					
	Effect	BootSE	BootLLCI	BootULCI	
Total	.1421	.0464	.0542	.2340	
Ind1	.0973	.0324	.0403	.1650	
Ind2	-.0003	.0265	-.0520	.0540	
Ind3	.0451	.0163	.0172	.0818	
Indirect effect key					
Ind1 Secure environment community -> eWOM -> WTB eWOM					
Ind2 Secure environment community -> Conformity -> WTB eWOM					
Ind3 Secure environment community -> eWOM -> Conformity -> WTB eWOM					

In conclusion, H2, H2a and H2b can all be rejected because the main effect between the solidness of the community and the willingness to buy does not occur. However, as discussed, this main effect contains of different factors and therefore the mediation analysis is still performed. This resulted in to different outcomes. The variables eWOM and conformity fully mediate the effect between the independent factor 'overall connection community' and the dependent factor 'willingness to buy eWOM'. The relation between 'overall connection community' and 'willingness to buy conformity' is positively mediated by conformity. However, eWOM does not positively mediate this direct effect. The mediating variable, conformity, fully mediates the direct effect between 'overall connection community' and 'willingness to buy conformity'. The researcher also tested the mediating variables on the other main effect; 'secure environment community' and 'willingness to buy eWOM'. The results show that eWOM positively mediates this direct effect. However, conformity does not. eWOM explains 9.73% of this direct effect.

So, the variables eWOM and conformity explain parts of the main effect such as the effect between 'overall connection community' and 'willingness to buy eWOM', however, they do not mediate the main effect completely. First, because this main effect does not completely occur as discussed in the previous paragraph. Therefore, the variables eWOM and conformity are not tested on the independent factor 'secure environment community' and 'willingness to buy conformity' because this effect is not significant. Second, eWOM does not positively mediate the effect between 'overall connection community' and 'willingness to buy conformity'. All hypotheses are rejected because of these reasons. However, the reader should keep in mind that when the hypotheses are dissected in their factors conclusions are drawn in a different manner. This will be discussed in chapter 5 where the researcher also discusses the research question.

4.6 Control variables

In both the linear regression as the mediation analysis, the following control variables are accounted for; age, gender, education and income.

Chapter 5: General discussion

In this last chapter, the researcher will discuss the research question and the sub questions shortly. Besides, academic and managerial implications are discussed, and this paper will end with limitations and further research.

5.1 Answering research questions & discussion

The research question that was formulated at the start of this paper is as followed: '*To what extent does the solidness of communities of a (video game) streamer influence the consumer's willingness to buy?*'. This research question was divided in to three sub questions which are answered by means of literature and the survey. This will be discussed below. The literature review resulted in to four hypotheses. The researcher expected that the main effect of solidness of the community on the willingness to buy of a consumer would occur and that this main effect is mediated by eWOM and conformity. Empirical research in the form of a survey resulted in to data that was analysed with a linear regression and a mediation analysis. These results and the hypotheses are discussed in the previous chapter. This chapter will mainly focus on the research question.

As discussed in the previous chapter, the researcher rejects all hypotheses because the main effect does not completely occur. There is a positive significant effect between factors of the independent and dependent variable, but the entire effect is not significant. On the one hand, this means that the hypotheses are rejected because the main effect is non-existent. However, on the other hand, this does not mean that there is no effect at all. In fact, it means that there is an effect of the 'overall connection community' (independent factor) on the 'willingness to buy eWOM' (dependent factor) for example. This is a good starting point to discuss the research question and sub questions.

The researcher formulated three sub questions for this paper, namely:

Question 1: "*To what extent does eWOM mediate the influence of the solidness of a video game streamers' community on the willingness to buy?*"

Question 2: "*To what extent does conformity mediate the influence of the solidness of a video game streamers' community on the willingness to buy?*"

Question 3: "*To what extent does a consumer seek 'input' from their community before making a decision?*"

"*To what extent does eWOM mediate the influence of the solidness of a video game streamers' community on the willingness to buy?*"

As discussed in the previous chapter, the variables that are used in this question are divided in to different factors, therefore, the entire effect does not occur but parts do. To discuss this question correctly, the researcher focusses on an important part of the question, namely the 'to what extent' part. Results show that eWOM fully mediates the effect between 'overall connection community' and 'willingness to buy eWOM' what are respectively factors of the independent variable 'solidness' and dependent variable 'WTB'. However, eWOM does not mediate the effect between the 'overall connection community' and 'willingness to buy conformity'. It does mediate the effect between 'secure environment community' and 'willingness to buy eWOM'.

In conclusion, eWOM mediates the influence of the solidness of video game streamers' community on the dependent factor 'willingness to buy eWOM'. It mediates only this part of the main effect, because it does not mediate the effect of the independent factor 'overall

connection community' on the dependent factor 'willingness to buy conformity'. It, for example, positively mediates the effect of how similar the interests of the community members are on the willingness to buy of a consumer whenever another community member has shared their experiences. Besides, it positively mediates the effect of whenever community members have the opportunity to suggest ideas on the willingness to buy when the product is approved by other community members.

"To what extent does conformity mediate the influence of the solidness of a video game streamers' community on the willingness to buy?"

This question is discussed in a similar way as sub question number 1. However, the conclusion of this question is different. The results show that conformity fully mediates the effect of the independent factor 'overall connection community' on the dependent factor 'willingness to buy eWOM'. So, conformity explains, together with the mediating variable eWOM, 100% of this main effect. Because both eWOM and conformity fully mediate this effect. Besides, conformity also fully mediates the effect of 'overall connection community' on the 'willingness to buy conformity' in contrary with the mediating variable eWOM which did not mediate this effect.

In conclusion, conformity mediates the influence of the overall connection community on the willingness to buy of a consumer. So, it only mediates parts of the main effect because it does not mediate the effect of the independent factor 'secure environment community' on the 'willingness to buy eWOM'. Conformity, for example, positively mediates the effect of the connection community members have with each other on the willingness to buy of a community member. This can mean willingness to buy when a product is sponsored by a streamer or whenever it is mentioned positively in the community.

"To what extent does a consumer seek 'input' from their community before making a decision?"

This question does not necessarily focus on the main effect nor the mediation effect. However, this question allows us to conclude whether the community of a consumer is important when making purchasing decisions. This question is important for the managerial implications of this research.

Results show that the connection between community members indeed have an effect on the willingness to buy of consumers. Willingness to buy is for example higher whenever this product is approved by other community members. This is, whenever other community members have shared their past experiences with the product. Besides, it shows that the solidness of a community has a positive influence on parts of the willingness to buy. So, the more similar the interests of the different community members are the higher the willingness to buy is when products are approved by the community members.

In conclusion, consumers indeed seek input in their community before making a decision. Because it is, for example, important that other community members approve of this decision or product. Besides, the influence of the connection between community members on the willingness to buy is explained by eWOM, what means that sharing experiences of products by other community members is an explaining factor of why the willingness to buy increases.

Research question: 'To what extent does the solidness of communities of a (video game) streamer influence the consumer's willingness to buy?'
The answer to the research question is a conclusion of the sub questions. This answer will be described very short because it is already treated extensively. The extent that the solidness of a community of a video game streamer influences the consumer's willingness to buy is as followed. Both the independent factors (overall connection community and secure environment community) have a positive influence on the willingness to buy eWOM. This means that, for example, the participation rate of community members that participate to community events has a positive influence on the willingness to buy whenever past experiences are shared about the product. Besides, the independent factor 'overall connection community' has a positive influence on the 'willingness to buy conformity'. This means that the participation rate also positively influences the willingness to buy whenever a product is sponsored by a streamer, for example. In conclusion, the 'solidness of communities of a video game streamer' influences the 'willingness to buy eWOM' and the 'overall connection of a community' (independent factor) influences the 'willingness to buy conformity'.

To conclude, some parts of the main effect occur and some parts of the mediating effects occur. However, not all expected effects turn out to be significant. The researcher based his hypotheses on prior research that was not mainly focused on the gaming (livestream)

communities. Therefore, this research deviates from prior done research because this is focused on the gaming communities. Some parts do correspond with prior research, but other parts do not. The reason could be that this research focuses mainly on these communities (gaming/livestream) instead of for example the travelling communities (Kim, Lee, & Hiemstra, 2004; Hernández-Méndez, Muñoz-Leiva, & Sánchez-Fernández, 2015). There are a few different reasons the researcher can describe to explain why these effects are not significant. This will be discussed in the limitations paragraph.

5.2 Academic & Managerial Implications

This part describes both academic and managerial implications of this paper. The researcher describes how this paper can be used and what actions should be taken by managers to implement this in to their business.

Academic implications

As discussed in the academic relevance paragraph, all variables are investigated in some way or form. For example, eWOM is already researched in online communities and in relation with the decision making of a consumer (Moran, Muzellec, & Nolan, 2014; Matute, Polo-Redondo, & Utrillas, 2016; Gruen, Osmonbekov, & Czaplewski, 2006; Hernández-Méndez, Muñoz-Leiva, & Sánchez-Fernández, 2015). However, these variables are not tested in the setting this research focusses on. Namely, the online video game streaming communities. Besides, the mediating variables used in this research are not investigated as a mediating variable between the solidness of a community and the consumers' willingness to buy.

The results from this research do not correspond entirely with prior research. Because, as described, the mediating variables do not entirely mediate the significant parts of the main effect. A reason for this is that it focuses on another community, namely the online gaming communities. So, this research adds this part to the existing research. It shows that some parts of the solidness of a gaming community a positive influence has on the willingness to buy of a consumer. Besides, it shows that eWOM and conformity mediate parts of this main effect. It partly supports existing research, because conclusions drawn from this research correspond partly with these papers.

This research focuses on these gaming communities and allows other researchers to elaborate on this subject. These communities are not widely investigated as of today, however, this

research already shows findings that can help with the further investigation of these communities. It also shows that these communities do not react the same as other communities and therefore these communities cannot be generalised with other communities.

Managerial implications

The managerial implications are focussed on the actions that need to be taken to implement this paper in to a business. Should there be additional research and how can the results out of this paper be used for decisions inside businesses. Besides, what are the contributions in practical perspectives of this paper.

First, as shortly discussed in the previous paragraph (§Answering research questions) the third sub question is important for the managerial implication. The third sub question of this research was as followed: "*To what extent does a consumer seek 'input' from their community before making a decision?*". The researcher stated that consumers indeed seek advice from their community before making a decision. Communities are important when making a decision because whenever community members say positive things about a certain product the willingness to buy towards this product increases. So, businesses can use this to reach the consumer through the community. Because, for example, conformity is important in these communities. Consumers make decisions whenever other community members have approved of this product.

Second, further research needs to be done before this paper is completely usable for businesses. This will also be described in Chapter 5 §Further Research, therefore, the researcher will discuss this part shortly in this paragraph. To implement these results in the right way, managers should spend a little bit more time investigating the subject. For example, other mediators and/or moderators should be investigated so that whenever these are applicable managers can account for these in their implication. Besides, as will be suggested in §Further Research the 'why' should be investigated to understand the consumer better. For example, why is a streamer important for the consumer when making a decision.

Besides, this paper focusses on whether there is positive relationship between the solidness of a community and the willingness to buy of a consumer. However, this paper does not focus on

how to make the implementation of the results profitable for a business. Managers should investigate whether the investment in streamers, for example, is profitable before investing.

Finally, whenever it turns out that these results can be implemented with profit. Managers should focus on the connection between streamers and community members. For example, companies can start investing in streamers with big communities to promote their brand. These investments should be monitored and it should be checked whether these investments are indeed profitable. Companies can, for example, focus on the conformity of a streamer and focus on how the streamer influences community members when making the decision to buy a product.

In conclusion, this research is a good starting point for businesses. This research shows for example that communities can have an influence on the consumer when making a decision. This is, however, not tested on the profitability. The researcher suggests conducting further research to make sure investing in these communities is profitable.

5.3 Limitations & Further Research

This part focusses on the limitations of this paper and describes what further research is required for better implications. The researcher first describes a few limitations which will be followed up by the suggestions of further research.

Limitations

The first limitation that is applicable to this paper is the lack of reversed scales that are used in the survey design. Questions used in the survey are all positively scaled, for example a question is: 'How likely are you to participate in a community event?'. The scale that is used in this question is 1-5 from extremely unlikely to extremely likely. This is a scale from negative to positive and this scale is used for all the other questions as well. However, research points out that this could lead to acquiescence response bias or the research shows that this bias can be removed with reversed scaling (Falthzik & Jolson, 1974; Churchill, 1979; Spector, 1992). This bias means that respondents tend to agree with the statement more than disagree. So, they tend to choose the more positive option more often. They tend to agree with statements regardless of the content of the statement (Bradburn & Sudman, 1979; Winkler, Kanouse, & Ware, 1982). The researcher did not use the reverse scaling, because other research also points out that this

could lead to a decrease in validity (Schriesheim & Hill, 1981; Idaszak & Drasgow, 1987). However, other research points out that this bias can be removed by reversed scaling. Therefore, the reader should keep in mind that this could lead to acquiescence response bias what could lead to slight changes in the results.

Besides, reversed scaling is a method to remove the common method bias that might occur when distributing a survey (Millsap, 1990). This bias can threat the validity of the research when relations are investigated with a common method. In other words, the results of a paper can be biased when the same method of questions is used in the entire survey. The reader of this paper should keep in mind that this bias might occur in this research because the researcher only used positively scaled questions in the survey design.

The second limitation that needs to be discussed is the internal consistency of some factors. The internal consistency of factors is measured with the use of the Cronbach's alpha. An acceptable Cronbach's alpha is considered > 0.70 and > 0.80 is considered as good. Between 0.60 and 0.70 is considered questionable (Cronbach, 1951; Bland & Altman, 1997). The variable 'solidness of the community' is divided in to the following factors: 'overall connection community' and 'secure environment community'. The Cronbach alpha of these factors are respectively, 0.610 & 0.643. This means that the internal consistency of these factors is considered questionable. Therefore, one could argue that the internal consistency of these factors is not good. However, other research points out that Cronbach's alpha's between 0.6 and 0.7 is questionable but not unusable (George & Mallery, 2003; Gliem & Gliem, 2003). This is, however, when the researcher can clarify and show evidence of the measurement he used. Chapter 3: Method §Review items survey describes evidence of the measurements used. This research provides evidence of each question and form of measurement that is used in the survey. Therefore, the researcher chose to continue with the research with the questionable Cronbach's alpha. In conclusion, the reader should keep in mind that the internal consistency of these factors is questionable. However, enough research is done to prove why these measurements are used.

Third, the mediating variables that are used in this research are highly correlated with each other. This correlation could lead to multicollinearity what results in problems when describing the results. To eliminate this multicollinearity, the researcher performed separate mediation analyses. However, this high correlation is still questionable when describing the results.

Finally, the fourth limitation that needs to be discussed is a question used in the survey what could lead to a lot of misunderstanding and diminishing of respondents. This regards the question: 'Do you consider yourself a member of an online (video game) streaming community?'. This question can be confusing for a respondent, because a respondent can be part of a community however does not know it him- or herself. This could lead to a respondent answering 'no' to this question what can lead to a lot of not usable responses. And it did, because 103 of the 298 usable responses answered this question with 'no'. There is a chance that whenever this question was questioned in a different way more respondents would have answered 'yes' what would lead to a more reliable research. The researcher tried to eliminate the confusion by adding the following to the question: 'Please choose 'yes' when you watch streams/videos regularly or any other reason why you feel part of a community' and 'Note: you don't necessarily need to pay something to be part of a community'. However, this probably did not help because 103 respondents filled in 'no'. The reader should keep in mind that the reliability of this research could have been higher whenever the researcher questioned this question in a different way.

In conclusion, the reader should keep in mind that this research contains a few limitations such as the bias for not reverse scaling the questions. Besides, the internal consistency is questionable because it is < 0.7 for some factors. Moreover, the mediating variables are highly correlated which can lead to multicollinearity. Finally, the reliability of this research could be higher when the right question was used at the beginning of the survey because this could have led to more respondents.

Further research
This paper mainly focusses on the effect of the solidness of a community on the willingness to buy of a consumer and the mediating variables eWOM and conformity. In this part, the researcher does suggestions for further research.

This research is conducted through a survey and, therefore, quantitative. This means that respondents only can choose from a set of multiple-choice questions and never describe the why and how. The researcher suggests investigating the why and how through a qualitative research. Why is the opinion of a streamer important and why are you more willing to buy

when such a figure supports it? Besides, how can a manager partner up with a streamer without interfering with the most important part of the community, fun? Questions that can be important whenever you decide to partner up with or sponsor a streamer. You want to do it correctly and you do not want to annoy the members of the community. It should be a beneficial partnership for both sides.

As discussed, this research mainly focuses on two mediating variables, namely eWOM and conformity. To fully understand the online gaming communities and their relationship with businesses, the researcher suggests investigating whether there are other mediating or moderating variables that are important for the understanding of this subject. This could help with implementing business plans that are focused on the gaming and livestreaming industry. Mediating or moderating variables that could be investigated are, for example, the variables that are now used as control variables. Does the 'age' of a community member have an influence on the positive effect of the 'overall connection community' on the 'willingness to buy'? Besides, the type of game the streamer focuses on could have an effect on this main effect or might explain parts of this main effect. Community members of a streamer that mainly focuses on shooting games might not explain this main effect, however, members of a streamer that plays role playing games does explain the main effect. Or, of course, the other way around.

Besides, this research focuses on the solidness of gaming and livestreaming communities. However, there are other important parts of this industry. For example, e-sports. This branch of the gaming industry is a fascinating part because it is fast growing. Research is necessary whenever one is interested in this part of gaming. For example, how do e-sport professional athletes influence the consumer behaviour or willingness to buy of consumers? To understand this industry better all different branches, need to be further investigated.

There are many parts of this subject that still can be investigated. However, this research allows other researchers to use this as a starting point. What other branches need to be investigated? And are there any other mediating or moderating variables that are important when implementing a business plan in the online gaming world?

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Appendix

Chapter 3: Method

Sampling

Distribution channels

Table 23; Survey distribution channels

Name	Members	Channel
Reddit (r/SampleSize)	123,940	Forum
Dutch Pc Gaming Community	848	Facebook
Dutch Game Industry	4,616	Facebook
Dutch Gaming Community	964	Facebook
Gaming & Live Streams	40,936	Facebook
All Things Gaming	166,035	Facebook
Gaming	69,985	Facebook
Fortnite België & Nederland	2,856	Facebook
NeoGAF.com (forum)	141,586	Forum
Possibly more forums		

*Permission for survey distribution is not yet given, but all pages do not permit this distribution.

Survey

Table 24; Design questionnaire

Part	Variables	Measurement	No. of items
Demographics	1. Age 2. Education 3. Gender 4. Income 5. Nationality	Scale Ordinal Nominal Scale	4
Behavioural characteristics & loyalty characteristics (part of solidness)	6. Do you consider yourself a member of a community of a video game streamer? 7. Number of months as a community member 8. Number of hours a week watching a stream 9. How likely are you to use the chat function during a stream?	Nominal Scale (Less than 1, 1-3, more than 3) Less than 1, 1-3, more than 3 Likert-scale (1 = extremely unlikely, 5 = extremely likely) Ordinal	5

	10. Which social media channels do you use to follow your streamers?		
Solidness of the community	11. I have the opportunity to suggest ideas to the rest of the community (secure environment) 12. My interests are similar then that of many other members in the community 13. How likely are you to participate in community events? 14. I am being able to ask questions in the community (secure environment) 15. I experience a certain connection with the community and their members	On a 5-point Likert-scale (1 = strongly disagree & 5 = strongly agree) 1 = extremely unlikely & 5 = extremely likely	5
eWOM	16. I often recommend products to others in the community 17. I often say positive things about products from which I've had positive experiences with 18. Community members recommend products to others in the community 19. Community members say positive things about products.	On a 5-point Likert-scale (1 = strongly disagree & 5 = strongly agree)	4
Conformity	20. I often buy products that other's in the community buy 21. I often consult in the community before buying a product 22. I often buy products streamers recommend 23. I often buy products sponsored by the streamer	On a 5-point Likert-scale (1 = strongly disagree & 5 = strongly agree)	4
Willingness to buy	24. My willingness to buy a product is higher when it is supported by a streamer	On a 5-point Likert-scale (1 = strongly disagree & 5 = strongly agree)	5

	25. My willingness to buy a product is higher when they are mentioned positively in the community 26. My willingness to buy a product is higher when the community approves of this product 27. My willingness to buy a product is higher when a streamer sponsored it 28. My willingness to buy a product is higher when other members have positive experiences with this product (and shared those experiences)		

Chapter 4: Results

Data description

What is your gender?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	120	61.5	61.5	61.5
	Female	70	35.9	35.9	97.4
	Other	5	2.6	2.6	100.0
	Total	195	100.0	100.0	

How old are you?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	11 - 15	7	3.6	3.6	3.6
	16 - 20	24	12.3	12.3	15.9
	21 - 25	91	46.7	46.7	62.6
	26 - 30	43	22.1	22.1	84.6
	31 - 35	12	6.2	6.2	90.8
	36 - 40	4	2.1	2.1	92.8
	41 >	14	7.2	7.2	100.0
	Total	195	100.0	100.0	

		Frequency	Percent	Valid Percent	Cumulative Percent
What is the highest degree or level of education you have?					
Valid	Primary school	3	1.5	1.5	1.5
	Some high school, no diploma	16	8.2	8.2	9.7
	High school graduate	22	11.3	11.3	21.0
	Community college (MBO)	16	8.2	8.2	29.2
	Associate degree (HBO)	5	2.6	2.6	31.8
	Bachelor's degree (HBO or WO)	71	36.4	36.4	68.2
	HBO+ (Master in HBO)	4	2.1	2.1	70.3
	Master's degree (WO)	49	25.1	25.1	95.4
	Professional degree	2	1.0	1.0	96.4
	Doctorate degree	7	3.6	3.6	100.0
	Total	195	100,0	100,0	

Table 28; Annual income

		Frequency	Percent	Valid Percent	Cumulative Percent
What is your income per year?					
Valid	Less than $10,000	94	48.2	48.2	48.2
	$10,000 - $24,999	29	14.9	14.9	63.1
	$25,000 - $39,999	38	19.5	19.5	82.6
	$40,000 - $59,999	20	10.3	10.3	92.8
	$60,000 - $100,000	7	3.6	3.6	96.4
	$100,000 or more	7	3.6	3.6	100.0
	Total	195	100.0	100.0	

Nationality	N (population size)		
Dutch	72	Russian	3
American	20	Singaporean	3
German	16	Indonesian	2
British	13	Malaysian	2
Indian	6	Polish	2
Australian	5	Scottish	2
Canadian	5	Turkish	2
Chinese	5	Brazilian, Croatian, Emirati, Filipino, Finnish, Israeli, Mauritius, Pakistani, Portuguese, Spanish, Swiss, Syrian & Ukrainian.	All 1
Danish	3		

Factor analysis

Rotations

Table 30; Rotation solidness (factor analysis)

Component Transformation Matrix		
Component	1	2
1	.743	.669
2	.669	-.743
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		

Table 31; Rotation willingness to buy (factor analysis)

Component Correlation Matrix		
Component	1	2
1	1.000	.464
2	.464	1.000
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.		

Pearson correlation

Table 32; Solidness of the community (Pearson correlation)

Correlations					
	Opportunity to suggest ideas.	Connection between members	Similar interests	Participation in community events	Able to ask questions
Opportunity to suggest ideas.	1	.154*	.185**	.278**	.474**
Connection between members	.154*	1	.346**	.388**	.264**
Similar interests	.185**	.346**	1	.292**	,114
Participation in community events	.278**	.388**	.292**	1	.283**
Able to ask questions	.474**	.264**	.114	.283**	1
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					
N = 195 (for all items)					

Table 33; Conformity (Pearson correlation)

Correlations				
	I buy products other members recommend	I consult in the community before buying	I buy products streamers recommend	I buy products sponsored by a streamer
I buy products other members recommend	1	.499**	.541**	.486**
I consult in the community before buying	.499**	1	.411**	.425**
I buy products streamers recommend	.541**	.411**	1	.698**
I buy products sponsored by a streamer	.486**	.425**	.698**	1
**. Correlation is significant at the 0.01 level (2-tailed).				
N = 195 (for all items)				

Table 34; eWOM (Pearson correlation)

Correlations				
	I recommend products	I say positive things	Community members recommend	Community members say positive things
I recommend products	1	.762**	.449**	.387**
I say positive things	.762**	1	.459**	.465**
Community members recommend products	.449**	.459**	1	.811**
Community members say positive things	.387**	.465**	.811**	1
**. Correlation is significant at the 0.01 level (2-tailed).				
N = 195 (for all items)				

Table 35; Willingness to buy (Pearson correlation)

| Correlations					
	WTB higher when supported by a streamer	WTB higher when mentioned positively	WTB higher when the community approves of this product	WTB higher when a streamer sponsored it	WTB higher when other members share experiences
WTB higher when supported by a streamer	1	.511**	.374**	.652**	.422**
WTB higher when mentioned positively	.511**	1	.691**	.354**	.713**
WTB higher when the community approves of this product	.374**	.691**	1	.368**	.700**
WTB higher when a streamer sponsored it	.652**	.354**	.368**	1	.325**
WTB higher when other members share experiences	.422**	.713**	.700**	.325**	1
**. Correlation is significant at the 0.01 level (2-tailed).					
N = 195 (for all items)					

Assumptions

Linear functions
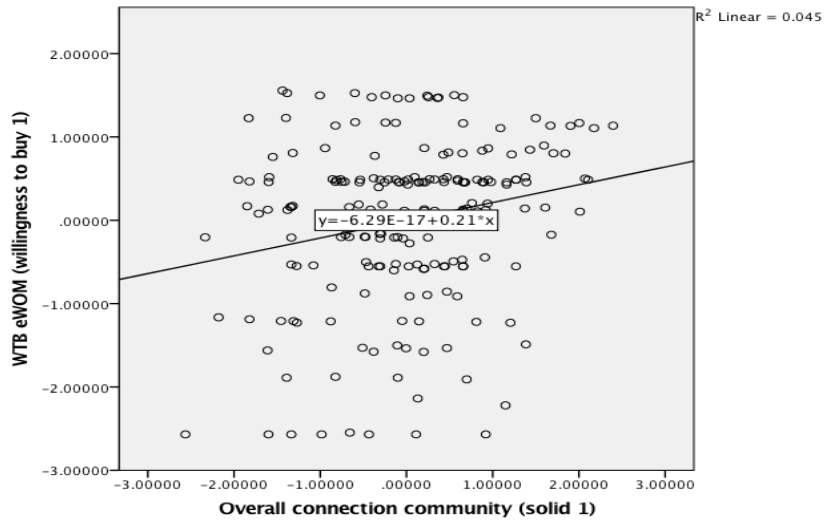
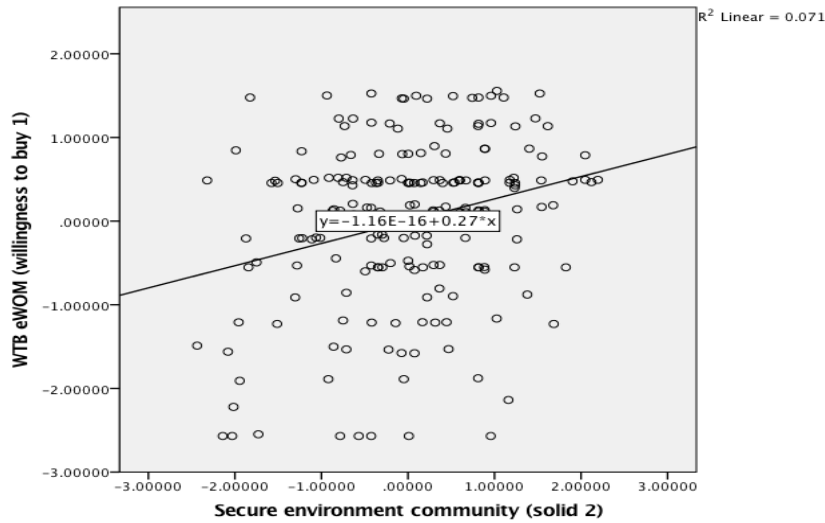*Figure 6; Linear function WTB eWOM & Overall connection community (solid 1)*

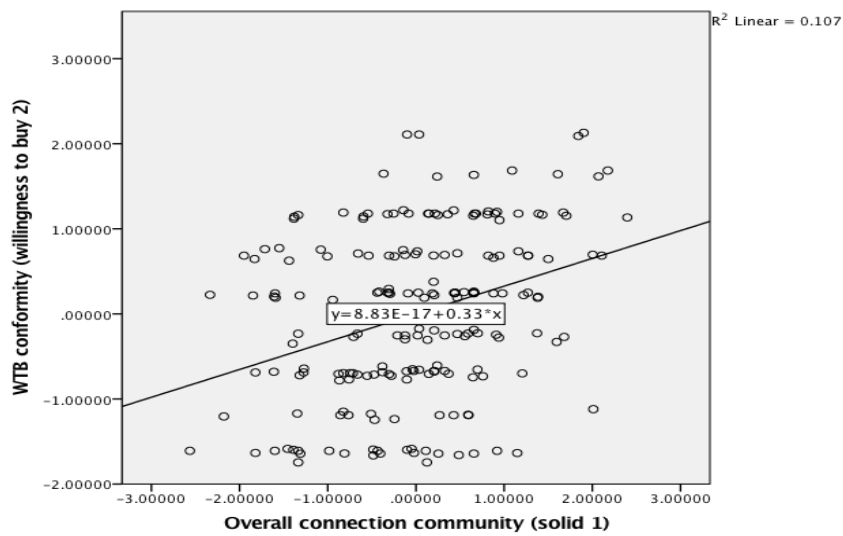*Figure 7; WTB eWOM & Secure environment community (solid 2)*

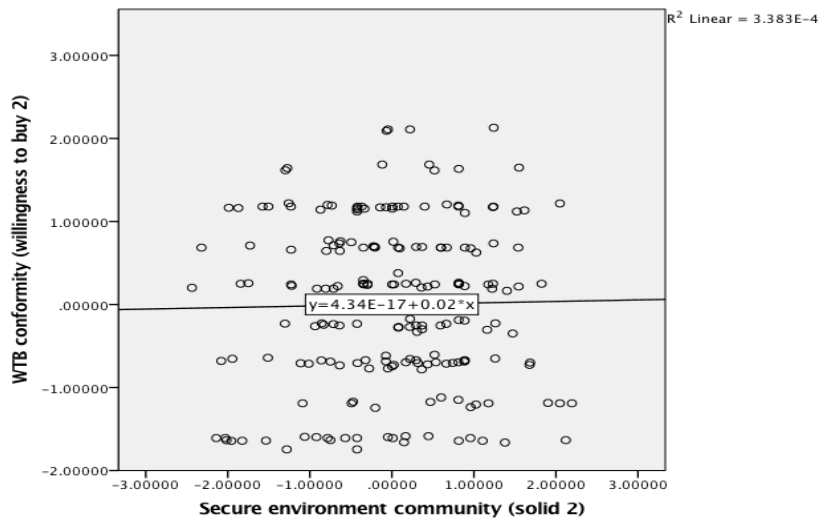*Figure 8; WTB Conformity & Overall connection community (solid 1)*

Normality

Descriptives			Statistic	Std. Error
WTB eWOM (willingness to buy 1)	Mean		.0000000	.07161149
	95% Confidence Interval for Mean	Lower Bound	-.1412370	
		Upper Bound	.1412370	
	5% Trimmed Mean		.0552492	
	Median		.1892892	
	Variance		1.000	
	Std. Deviation		1.00000000	
	Minimum		-2.56912	
	Maximum		1.55628	
	Range		4.12540	
	Interquartile Range		1.05293	
	Skewness		-.807	.174
	Kurtosis		.250	.346
WTB conformity (willingness to buy 2)	Mean		.0000000	.07161149
	95% Confidence Interval for Mean	Lower Bound	-.1412370	
		Upper Bound	.1412370	
	5% Trimmed Mean		-.0096694	
	Median		.2011297	
	Variance		1.000	

	Std. Deviation	1.00000000	
	Minimum	-1.74538	
	Maximum	2.12845	
	Range	3.87384	
	Interquartile Range	1.41808	
	Skewness	-.050	.174
	Kurtosis	-.920	.346

Table 37; Tests of normality

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
WTB eWOM (willingness to buy 1)	.146	195	.000	.931	195	.000
WTB conformity (willingness to buy 2)	.099	195	.000	.958	195	.000
a. Lilliefors Significance Correction						

Homoscedasticity
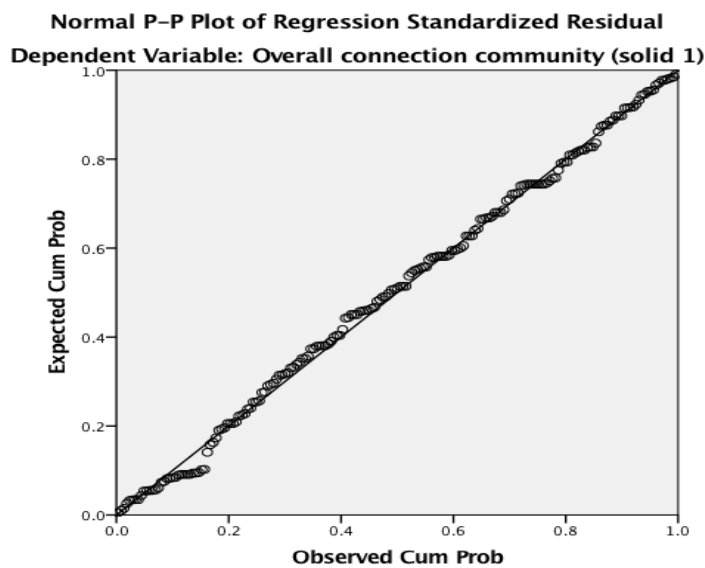
Figure 10; Homoscedasticity (Overall connection community)

Normal P-P Plot of Regression Standardized Residual

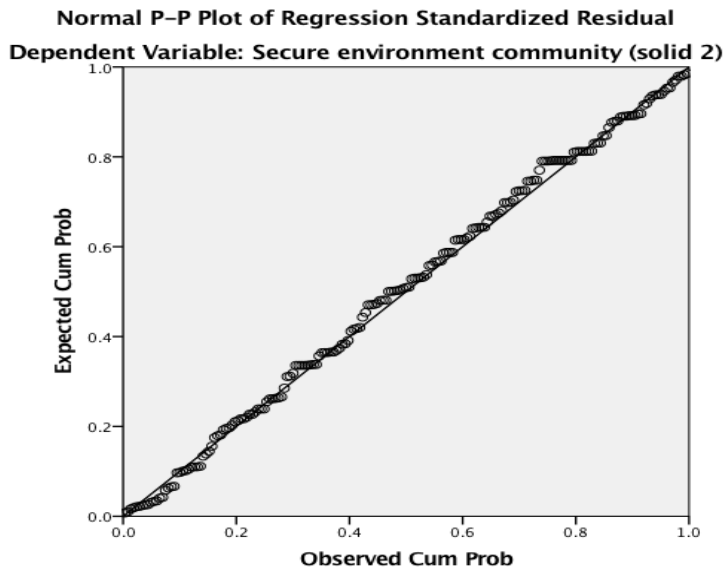**Dependent Variable: Secure environment community (solid 2)**

Figure 11; Homoscedasticity (Secure environment community)

Multicollinearity

Table 38; Overall connection community (Multicollinearity)

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Secure environment community (solid 2)	1.000	1.000
a. Dependent Variable: Overall connection community (solid 1)			

Table 39; Secure environment community (Multicollinearity)

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Overall connection community (solid 1)	1.000	1.000
a. Dependent Variable: Secure environment community (solid 2)			