# Trust me, I am Famous.

A study on the effects of YouTube metrics and review valence on perceived source credibility and purchase intention.

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#### **ABSTRACT**

The changes that Web 2.0 brought to people's lives in the past years have also introduced a lot of changes in several industries. Especially social media have disrupted the ways of interaction within societies, interpersonal relations, as well as communication and advertising in numerous fields. Likewise, a new landscape has been created, that nowadays hosts the actions that in the past would have mainly taken place in the outside world or through traditional media.

This thesis attempted to research the effects of technology product review videos on YouTube, the leading social medium when it comes to video hosting. Using YouTube's environment, an online experimental survey was conducted. The goal was to understand the effect of YouTube's popularity metrics that exist for every video and channel, together with those of review valence, on the perceived information credibility and purchase intention of the audience. The experimental part of the research helped in revealing cause-effect relationships, as well as joint effects from the manipulations on the dependent variables.

The results from the data analysis were both expected and surprising. They partly confirmed past literature regarding the effects of social media metrics, that were found to positively affect both credibility and purchase intention. As long as review valence is concerned, the findings were in contrast with what has been demonstrated in past studies, showing no effect on either of the two dependent variables. Interestingly, the only joint effect that was found was from the combination of positive valence with low metrics on the trustworthiness of the source and the information as perceived by the participants. The findings are finally discussed through the scope of the Heuristic-Systematic model of information processing in order to provide a better understanding of the motives and reasons behind them.

## Keywords:

Online reviews, social media metrics, review valence, credibility, purchase intention.

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### 1. Introduction

"The digital celebrity... managed to pocket \$12 million between June 1, 2016 and June 1, 2017. That's only 20% less than his 2016 earnings of \$15 million, and the total landed him the number six spot on this year's list of highest-paid YouTube stars."

(Berg, 2017, para. 2)

The quote above is about a YouTuber named PewDiePie, and it can be seen as an indicator of the power, the reach, and the wealth that some newly emerged YouTube stars have nowadays. It is interesting to mention that the number of subscribers of PewDiePie as of June 2018 has risen to approximately 63.5 million and his videos have been viewed more than 18 billion times (PewDiePie, n.d.).

This thesis focuses on social media metrics, specifically in review videos and their effects on the audience. Do higher numbers of views and subscribers affect what people think about the review? Does it affect their purchase behavior? Does the valence of the review, in interaction with the numbers produce different results? These are some of the questions that this thesis tries to address.

Moving from reviewing past research within YouTube's environment, as well as reviews in general, towards the specific variables of the research questions, this thesis explores the interactions between concepts like social media metrics, review valence, perceived source credibility and purchase intention through the scope of the dual process models of persuasion.

### 1.1 YouTube's growth and the unexplored types of influence

Over the last years, social media and social networking sites are getting into people's everyday lives with exponentially growing pace. In 2015, approximately one-third of the global population actively participated in social media platforms (Chaudhri & Kaul, 2017) and 176 million new users were added in the same year only. The average usage per day of the total users is 118 minutes (Chaudhri & Kaul, 2017).

From all the social media platforms that are being used all around the world, YouTube is the second most used right after Facebook (Chaudhri & Kaul, 2017). Its usage is so extensive that it had "about 1.1 billion unique monthly visitors in 2016" (Chaudhri &

Kaul, 2017, p.1). Especially the newest generations, are using YouTube so extensively that it almost monopolizes their screen time over traditional media and TV (Perry, 2016).

YouTube was used mainly by amateur content creators in its early years. The video production of these content creators had no monetary motivations at this stage (Gerhards, 2017; Jarrett, 2008). That has changed over time. More and more producers are becoming increasingly professional in their video production and their primary goal is the monetization of their content (Gerhards, 2017; Kim, 2012).

A lot of these creators have managed to create extended fanbases. In some cases, they have reached dozens of millions of subscribers on their channels (Lee & Watkins, 2016). By being original content creators, these newly emerged stars are perceived as particularly credible and trustworthy (Gerhards, 2017; Cheong & Morrison, 2008; Jonas, 2010). Research has shown that especially among teenagers they are considered to be more influential than traditional celebrities (Ault, 2015). This phenomenon, of course, was not something that big brands, corporations, and advertisers would not take advantage of (Gerhards, 2017; Barnes & Hair, 2009).

There are several ways that content creators can monetize their content. Some of them take advantage of their own popularity. That includes selling merchandise with their brand name, such as t-shirts, or promoting their services in the cases that they are demonstrating specific skills in their videos, for example, selling online courses on video editing, when a creator's content is focused on video editing tutorials (Evan Edinger: The five ways YouTubers make money, 2017). When it comes to income from advertising, such actions are closely related to online marketing.

Online marketing is the process of promoting services or products in digital networks (Sridevi & Kumar, 2015). The classic 4 Ps of marketing, product, price, place, and promotion are still used, but they are adjusted in order to fit the digital space (Hossain & Rahman, 2017). In the case of content creators what is being mostly leveraged is the place because their channels and their content are used to distribute or promote the product or service, the price, through affiliate marketing that leads to discounted prices and, of course, the promotion through product reviews or advertising. The term that connects YouTube content creators with online marketing is YouTube endorsement marketing (Wu, 2016). Content creators are being sponsored by brands in order to integrate the branded products or services in their videos and/or talk about them (Wu, 2016).

Nowadays, these brand endorsements on YouTube can be found across a wide spectrum of content types related to beauty and fashion, cooking, driving, gaming, and many more (Wu, 2016). According to Wu (2016), there are three categories of relations between the content creators and the brands in most cases. One is the sponsorship of the content creator, where he/she is directly paid by the brand in order to produce videos that

promote the brand. The second is affiliate marketing, where creators are used in order to enhance the sales by providing coupons or discounts to their viewers and getting a commission on each sale. Last is the free product sampling. In this case, the brands provide products to the content creators in order to have them reviewed or talked about in their videos. A lot of times the content creators use some of these products in giveaway campaigns, such as competitions for the audience with the very product as the prize (Wu, 2016).

The problem that is explored in this thesis is the effect of the celebrity of the creators on the perceived source credibility and the behavior of the audience in the context of review videos. The influence of the content creators has already been studied (Lim, Radzol, Cheah, & Wong, 2017; Johansen & Guldvik, 2017), though not extensively since the whole social media star system is a quite new development. The research focuses on the particular effects of the metrics, more specifically the views, the subscribers, and the likes/dislikes of a review video, as well as the effects of the review valence (positive or negative) on the way the consumers perceive the credibility of the information received and on their purchase intentions. Review videos were chosen to be researched because they usually deal with specific categories of products and are viewed by people that are interested in them. This way the reviews can have an effect on what people think about the products, as well as whether they will purchase them or not (DeMers, 2015).

More specifically, the research is about video reviews of technology products. Reviewers in this industry have the power to create positive and negative impressions about products that are usually of high prices, yet commonly used in most people's everyday lives. This influence is important especially since an exhaustive regulatory framework has not yet been formed in order to put rules and limits on what reviewers and companies are able to do and say on this platform, as well as the transparency level that is necessary regarding the financial relationships between them.

## 1.2 Research questions

Research question #1: What is the effect of social media metrics in technology product review videos on YouTube on viewer attitudes towards the product and the information provided?

Sub-question #1.1: What is the effect of social media metrics in technology product review videos on YouTube on the information credibility as perceived by the viewer? Sub-question #1.2: What is the effect of social media metrics in technology product review videos on YouTube on viewer purchase intention?

Research question #2: What is the effect of the valence in technology product review videos on YouTube on the viewers' attitude towards the product and the information provided?

Sub-question #2.1: What is the effect of the valence in technology product review videos on YouTube on the information credibility as perceived by the viewer? Sub-question #2.2: What is the effect of the valence in technology product review videos on YouTube on viewer purchase intention?

Research question #3: Is there an interaction between the effects of social media metrics and the effects of valence on the viewer attitudes towards the information provided and the product?

Sub-question #3.1: Is there an interaction between the effects of social media metrics and the effects of valence on the information credibility as perceived by the viewer?

Sub-question #3.2: Is there an interaction between the effects of social media metrics and the effects of valence on viewer purchase intention?

The main concepts of these research questions are: a) the number of views, the likes of the video, and subscribers of the channel that are researched under the concept of social media metrics, b) the valence of a review, meaning the negative or positive tone of the review towards the product, c) perceived information credibility, referring to what extent the viewer tends to believe or not the information provided, and d) purchase intention, namely, the attitude of the viewer towards the idea of buying the reviewed product.

### 1.3 The notions of credibility and purchase intention

Perceived source credibility is a concept that has been studied extensively. Being such a broad concept, credibility has been researched within different scientific fields like political science, psychology, communication, advertising and business in both online and offline settings (McGuire, 1968, Householder & LaMarre, 2014, Zha, Li & Yan, 2015, Ong & Ong, 2015).

From a psychology perspective, for example, McGuire (1968) analyzed the effects that specific characteristics of the source, like trustworthiness, expertise, and attractiveness, have on the recipient's attitude towards the provided information. Within the digital space and more specifically on social media, Householder and LaMarre (2014) studied the credibility of political candidates on Facebook. Diehl, Weeks, and de Zuniga's paper (2016) focused on the impact of social interaction and news searching within social media on political views and opinions of the viewers. In the field of news consumption and information seeking in social media, Turcotte, York, Irving, Scholl, and Pingree (2015) researched the

factors that affect trust on news-related Facebook posts and Westerman, Spence, and Van Heide (2014) conducted an experiment that examined the effects of the recency of Twitter posts on perceived source credibility.

In order to be more precise about the appropriate context of credibility for the present research, it is necessary to discuss how credibility has been studied with regards to online marketing, including social media and endorsement marketing, as well as online advertising. Some scholars have focused on social media marketing and advertising credibility. Zha et al. (2015) investigated the credibility of web advertisement in China. Their results showed that perceived informativeness, entertainment, and credibility positively affect the audience's attitude towards web advertising. From those factors, the factor of credibility had the biggest influence on attitude towards web advertising. Lastly, the attitude towards advertising was demonstrated to positively affect the usage of web advertisements for information seeking, as well as to function as a predictor of consumer's behavior.

In their paper, Chang, Yu, and Lu (2015) researched the credibility and persuasiveness of social media marketing on Facebook in Taiwan. By using the Elaboration Likelihood Model, they found that post popularity positively affects the usefulness and the intention to diffuse the message on both high and low elaboration audience groups. Their results showed that argument quality, post popularity, and attractiveness have positive effects on perceived usefulness and preference of the information and that usefulness positively affects the consumer's intention to like and share the provided information.

The aspect of credibility, with regards to influencers, endorsers, and celebrities, is possibly the one that has been under research by the most scholars so far. Ohanian's research (1990), having as a starting point classic studies from psychology that concern the dimensions of credibility, resulted in a scale that has been and still is widely used in research in order to measure the credibility of celebrity endorsers. Ong and Ong (2015) studied the effects of celebrity endorser credibility on the purchase intention of the audience in an online setting. Their industry of choice was the footwear industry and their country of focus was Malaysia. They used the tri-dimensional concept of celebrity credibility (trustworthiness, expertise, attractiveness) as it was introduced in Ohanian's paper (1990). The results demonstrated that the effects of celebrity credibility on purchase intention were indirect and attitude towards advertisement played a catalytic role between them. Munnukka, Uisitalo, and Toivonen's (2016) main findings confirmed Ohanian's (1990) three dimensions of endorser credibility and similarity was added as a fourth dimension. All four dimensions were shown to positively affect the attitude towards advertisement. The dimensions of trustworthiness and similarity were the most influential and the attitude towards advertisement was demonstrated to positively affect brand attitude.

A similar study with similar results was conducted by Samat, Hashim, and Yusoff

(2015), but in the social media sphere, rather than in traditional advertisement. Similarly, Lim et al. (2017) examined the effects of social media influencers on purchase intention. They found that the credibility of social media influencers does not affect the consumer's attitude and purchase intention when there is a discrepancy between the endorser and the product. The same was found regarding attractiveness. Overall, their findings point out the importance of relevance between endorser and product as it is expressed through the symbolism and the expertise of the endorser.

As far as purchase intention is concerned, it has mostly been studied through the scopes of social media advertising and web advertising. More specifically, researchers have studied the effects of Facebook advertisements and have demonstrated that the use of Facebook in advertising enhances customer participation, as well as brand image and equity (Dehghani & Tumer, 2015). The latter results in increased purchase intention. High numbers of likes and shares have also been demonstrated to have an indirect effect on purchase intention through increased brand reputation.

Another aspect that has been studied is that of the visual design of web advertisements (Shaouf, Lu, & Li, 2016). The visual aesthetics of online advertisements have been demonstrated to have a direct and positive effect on the consumer's attitude towards the advertisement and the brand. Through the latter, also an indirect effect on purchase intention was found. Lastly, Balakrishnan, Dahnil, and Yi (2014) pointed out the effectiveness of eWord-Of-Mouth, online advertising and communities in social media with regards to promoting brand loyalty and increasing the purchase intention of younger generations.

#### 1.4 Popularity indicators, reviews, and review valence

Some studies have had a similar approach to the current one, but there are several key differentiating factors. Mir and Rehman (2013) and Yuksel (2017) touch upon the general idea of this research. Mir and Rehman (2013), however, limit their population on university students from Islamabad. They conducted a quantitative survey and they had a collective definition and measurement of Quantity of Posts, Views, and Reviews (QPVR). In their analysis, they measured the effects of QPVR on perceived usefulness and credibility of the user-generated product content, as well as the attitude of the audience towards that contents and its purchase intentions.

Yuksel (2017) conducted a quantitative survey as well. The questionnaire was posted in the description box of two YouTube videos related to beauty products. She measured the effects of the number of Views, Likes, Comments, and Replies (VLCR) of videos on the participants' perspective towards the information. Furthermore, she used the videos as stimuli in order to measure the respondents' perceived credibility, usefulness,

attitude towards purchase and purchase intention. In her analysis, she compared the variables with one another, using VLCR, perceived credibility, usefulness and video characteristics regarding the quality and the length of the video as independent variables and found positive effects in nearly all the combinations that she tested. The only combination that showed no effect was that of VLCR on perceived usefulness. One of the basic limitations of her study concerned the sample because the research was conducted in the Turkish language and the whole sample included only females, most of them coming from the fanbase of the two YouTube channels that promoted the questionnaire.

Past theses from master's students have also focused on the concepts of YouTube, reviews, and influence. Rasidkadic (2016) manipulated the popularity indicators of a video with beauty content on YouTube. More specifically, the views, the likes, and the subscribers were manipulated, and their effects were tested, separately and in comparison with one another, on the participants' opinion regarding the reviewer and the product. Lastly, van Workum (2016) conducted a survey that explored the dynamics between video and written reviews and their effects on the purchase intentions of the viewers. Furthermore, she explored who engages more with video reviews and for what reasons.

As far as review valence is concerned, even though as it is fairly simple as a concept and has been extensively studied, the research that has been done is mostly on written reviews (Lee & Koo, 2012; Doh & Hwang, 2009; Pavlou & Dimoka, 2006; Qiu, Pang & Lim, 2012). So far, no studies were found that examine the effect of valence in review videos. Apart from that, the findings on the effects of negative and positive valence in written reviews show great inconsistency and there is no academic consensus regarding the effects that the type of valence has on the audience (Lee & Koo, 2012; Kusumasondjaja, Shanka, & Marchegiani, 2012). Similarly, little research has been done that associates review valance with the identity of the source (Kusumasondjaja et al., 2012) and no research was found that jointly measures the effects of valence and popularity as expressed by the metrics.

# 1.5 The importance of research on major social media platforms

As it has been demonstrated above, since the emergence of social media the platforms and their effects have attracted the interest of several scholars and researchers. That happened because of the great popularity of social media and the special place that they have taken in people's daily lives, as well as the possibilities that they provide in numerous industries and fields, such as news and information, advertisement, business, social causes and networking among others. However, YouTube and similar video-sharing platforms have not been studied extensively (Mir & Rehman, 2013). Additionally, YouTube's relatively recent development, its exponential growth and the fact that it keeps on changing

and evolving in different aspects (such as numbers of views, partner policies etc.) make it a constantly relevant subject of study.

In order to fill the gaps in research, the current research follows an approach that is targeted more on the effect of the metrics, perceived as reputation/popularity indicators, as well as the valence of the video on perceived source credibility and purchase intention. An online experiment that focuses on YouTube review videos has been conducted and there were minimal restrictions regarding the population under research. The importance and the value of studying major online platforms, such as YouTube, that belong to big corporations is evident. Google, YouTube's owner, is one of the largest companies globally and as such it has a great impact and power over every aspect of the society. These impacts affect the younger generations even more since YouTube has been found to gradually replace TV in terms of watching time (Perrin, 2015).

Additionally, despite the efforts during the last years, there is still a need to further implement laws and regulations in order to have some rules set regarding the practices of companies in such platforms. Further research can assist in pointing out the need for this gap to be filled by the institutions in charge.

Finally, from a business point of view, this research can provide insights for managers and advertisers. It can help in understanding how the consumers' perception of the hard numbers of the social media metrics of YouTube specifically affects their beliefs and behavioral intentions. Furthermore, information is provided on what the relationship is between the latter and the negative or positive video reviews of products.

In the following chapters, there will be a thorough explanation of the theoretical concepts of the research along with a review of the past literature on them. The research method will follow, as well as the final results and their analysis. Lastly, the discussion part is where the results will be talked about and it will include suggestions for further research based on the findings and the limitations of the study.

### 2. Theoretical Framework

### 2.1 YouTube

The emergence of Web 2.0 has brought a revolution in the digital space and on how people make use of it (O'Reilly & Battelle, 2009). The evolution from the simple static web pages to the platformization of the Web has allowed extended user participation and collective control over the provided content (O'Reilly & Battelle, 2009). Another key characteristic of Web 2.0 is the possibility of interaction between all users of the Web (Van Dijck, 2007). The impact that these changes have had on the everyday lives of the users is demonstrated by the fact that visiting the Web is not anymore about purely informational purposes, but people are living parts of their lives online (Levy & Stone, 2006). That is supported by the fact that numerous activities that used to take place in several other settings or required specific tools other than a PC and an Internet connection, nowadays happen mostly if not totally online. Some of them are gaming, watching movies, theatrical plays, shows and events, learning, networking, communicating with each other, meeting new people, building careers (e.g. comedians, photographers, models, artists), and buying goods or services.

The most prominent part of Web 2.0 is the emergence of social media. Social media are platforms that are used by people to connect with one another, as well as to create and share content. The main concern of this thesis is how the companies make use of the Web and such platforms since both the Web and social media have nowadays become the new advertising space for the majority of companies (Dehghani, Khorram Niaki, Ramezani, & Sali, 2016).

From all the social media, the focus of this study is on YouTube. YouTube is a media company founded in 2005 "by three former PayPal employees as an outlet for video sharing after one of the founders noticed that there was no online space where they could re-watch videos of important cultural events" (Perry, 2016, p. 1). YouTube came in the era of Web 2.0 along with and assisted by the emergence of other important online elements, such as the cheaper and massively available broadband Internet, as well as software developments like Macromedia's Flash Player (Vonderau, 2016). In only one year, the success of the platform was huge, and it started growing exponentially. In 2006 it was declared "the invention of 2006" by Time magazine (Jarrett, 2008). The same year, it was the fastest growing website. Its browsership increased in the first half of 2006 by 297% and its monthly unique visitors from 4.9 to 19.6 million (Freeman & Chapman, 2007). Eventually, it was bought by Google for \$1.6 billion in October of the same year (Gerhards, 2017).

YouTube serves as a free platform where users can upload, watch, share, and comment on videos (Freeman & Chapman, 2007). Starting with the slogan "Broadcast

Yourself", YouTube was initially a platform dedicated to sharing User Generated Content (UGC), created mainly by amateurs and with the goal of sharing (Jarrett, 2008). The definition by OECD of User Generated Content is "i) content made publicly available over the Internet, ii) which reflects a certain amount of creative effort, and iii) which is created outside of professional routines and practices" (Wunsch-Vincent, & Vickery, 2007, p. 9). However, within YouTube, that type of UGC did not last long. Undoubtedly, YouTube brought a vast increase and change in entertainment and online content, but also disrupted the traditional business model of entertainment and broadcast by introducing the value of UGC (Vonderau, 2016). The success of YouTube enhanced vastly the reach and power of UGC and unavoidably companies started to leverage on this great reach and power (Barnes & Hair, 2009). The platform eventually provided opportunities for monetization of the content made by amateur creators. Consequently, the attractiveness of monetization led them to introduce more and more professionalization into their work (Kim, 2012; Gerhards, 2017). This created a chain interaction that started by the attention of the companies to the original UGC, then proceeded to the interest of the creators in the monetization of their content and ended up attracting even more attention by advertisers (Burgess, 2012). The fears raised in the past years that professional use will dominate the platform (Weatherall, 2012) have nowadays been confirmed.

It is worth mentioning that the monetization plans existed from the early developmental years of YouTube (Vonderau, 2016). The idea was to create a community around the video content that would provide opportunities for monetization on the interaction among the users and also on those towards the content (Vonderau, 2016). That can be seen since 2005 when the redesign of the platform included metrics, related videos that would encourage the users to spend more time on the platform, sharing capabilities, and integration with other social media platforms such as MySpace at that time (Vonderau, 2016). During those first developmental years, there have been several changes by gradually testing features and simplifying the interface (Vonderau, 2016). Furthermore, by including interactive ads and features similar to Google Adwords, called AdSense, as well as by the turn from the community approach towards an algorithm-based flow of content it became evident that the main purpose of the platform was to grow exponentially and then disrupt the market and take the place of the traditional media (Vonderau, 2016).

Last, but still probably the most important aspect of YouTube is its reach and influence. Certain channels amass several millions of subscribers (Lee & Watkins, 2016) and the people behind the channels have become greatly influential celebrities especially in the younger generations (Gerhards, 2017; Perry, 2016). YouTube is dominating the screen time in comparison to TV and traditional media within these generations (Perry, 2016). The informal and fun approach of UGC appeals more to consumers in terms of trustworthiness

(Cheong & Morrison, 2008; Jonas, 2010) and these new celebrities are being considered as opinion leaders (MacKinnon, 2012). Finally, in some cases the newly emerged YouTube stars have been found to be more influential than traditional celebrities (Ault, 2015; Gerhards, 2017) and the metrics of their channels and videos, such as numbers of views, subscribers, likes and comments positively affect their credibility (Mir & Rehman, 2013; O'Reilly & Marx, 2011).

The revenue of YouTubers comes from the ads that are being displayed before or in the middle of each video, as well as from banner ads. Of course, a big part of their revenue comes from partnerships or sponsorships with brands, where they are used as brand ambassadors or simply promote products, as well as from in-video product placement (Evan Edinger: The five ways YouTubers make money, 2017). Other ways are by selling merchandise, such as shirts or phone cases with their brand name, and by affiliate marketing, where, when they demonstrate a product they post a link to a web-shop that they have made a discount deal with, thus functioning as sales partners (Evan Edinger: The five ways YouTubers make money, 2017). Nowadays, the use of crowd-sourced revenue services is another possible revenue generator that is getting more and more popular. Patreon is probably the most popular provider of such services. It is a platform that allows the content creators to either receive tips or have paid subscription plans for their fans that include some extra services, such as private Q&A sessions or premium-only content (Patreon, n.d.). From all the available monetization options, the importance of a large audience and consequently high social media metrics is evident. The characteristics and the effects of social media metrics that measure and demonstrate reach and audience engagement are discussed in the next chapter.

#### 2.2 Social Media Metrics

In the vast majority of social media there are buttons such as "Like", "Play", "Subscribe" and many more. They are used in order to generate visible numbers that are easy to locate, like those of the views of the video or the followers of a channel, but also other countable and mineable data in the same way that other types of measurement have always been used by the media (Baym, 2013). This way user interactions are quantified and "insights from web analytics are connected with individual user profiles and the social graph" (Gerlitz & Helmond, 2013, p. 1362).

Of course, the fact that they are perceived as the basic indicators of content engagement and popularity (Romero, Galuba, Asur, & Huberman, 2011), since they are the results of actions of the audience (Baym, 2013), is one of the reasons why they have such a central role in social media, but there are also other reasons that justify their existence. The visible metrics are part of the policies of social networking sites. Since they are perceived

as popularity indicators (Baym, 2013), they are being used in order to engage the users in the process of trying to increase their social media metrics (Gillespie, 2010). In the end, these metrics help to engage and motivate the audience to interact and the content producers to create more content that will make these metrics rise. This way, these metrics become an end in themselves.

The metrics make the reach of each video and each content creator measurable. High social media metrics demonstrate high reach and engagement and a great potential to increase web traffic. That potential for increased web traffic can ultimately lead to higher revenue, thus addressing the very core interests of businesses (Lee, 2012). As stated in The Like Economy by Gerlitz and Helmond (2013), social media metrics "enable only particular forms of social engagement and create specific relations between the social, the traceable and the marketable, filtering them for positive and scalable effects." (p.1362). They occupy such an accessible and central place in the pages and play such a crucial role because they are perceived as true indicators of audience size, influence, and engagement (Romero et al., 2011; Baym, 2013). That creates the assumption that the higher the number, the higher the value, the reach, the credibility, and the influence (De Micheli & Stroppa, 2013; Romero et al., 2011). They are considered to be major sources of potential profit, as discussed above, both for the content creators by increased partnerships with brands and increased merchandise sales or Patreon income, as well as for brands through the larger reach of their advertising. Because of that the metrics in certain cases affect professional decisions and drive investments (Baym, 2013).

Nevertheless, there are some scholars that are more skeptical towards the power and the influence of social media metrics. Fulgoni (2015, p. 234) calls them "soft metrics" and argues that it is not easy to relate them to sales and thus understand their true impact. Romero et al., in Influence and passivity in social media (2011), demonstrated that the correlation between popularity, of which the metrics are one of its most famous and widely used indicators, and influence is "weaker than might be expected" (p. 8). Baym (2013) suggests that these data may be the wrong indicators of the wrong concepts. She talks about the decontextualization that is caused by the process of interpreting an action into a single data entry. Explaining it further, she states that a "like" can have several meanings including irony and parody (Gerlitz & Helmond, 2013). Also, people often like pages or content in order to participate in contests or promotions and not because they actually enjoy or support the content and the creator (Cohen, 2013). Another point of criticism concerns the preference that algorithms can show in certain types of content. Some examples are the search results of YouTube or the trending videos section, as well as the recommended profiles to follow on Twitter that you can follow massively with just one click. The preferential promotion of privileged content can result in its exponential exposure in

comparison with other types of content, thus leading to forcefully increased social media metrics. Lastly, the deceptive ways that have emerged in order to boost the metrics, such as buying likes or followers, need to be also taken into consideration (De Micheli & Stroppa, 2013).

Napoli (2011) is more concerned about the partiality of social media metrics and takes into account the digital divide. Participants in online discussions have specific profiles regarding their economic status, their age, their location, and their level of education (Baym, 2013). Napoli (2011) and Baym (2013) stress that specific parts of the society are represented and included in those metrics and, on the other hand, other levels can be either totally excluded or inadequately represented. There are audiences engaged in anything, from music to technology, that do not participate in terms of commenting, liking, or following in the sense of subscribing and thus do not leave complete tracks to be measured in all levels (Baym, 2013). Finally, Dean (2005), in a more politically charged argument, states that social media turn decontextualized messages into data. This way, the content, the sender, and the receiver become irrelevant and all that matters is the circulation and the collection of the data. As a consequence, the focus is only on the revenue-generating potential of the content. The people, their personalities, the interactions among them, and the meaning of the messages are being lost in the process.

Summing up, the reasoning behind social media metrics, as well as their influence and importance are evident throughout the literature. Of course, the scholars that argue against the metrics have strong arguments on their approach. Although, in this study what the metrics actually measure is not of such great importance. The main concern is what the audience believes they measure and the focus is on their influence on the audience's perceptions and behavioral intention.

#### 2.3 Review Valence

Review valence is the second independent variable that is manipulated in this experiment. Valence is defined as the positive or negative tone of the provided information about an object (Frijda, 1986). Translated into review valence, it refers to the classification of the direction of a review as positive or negative (Lee, Rodgers, & Kim., 2009). The valence of a review is important because of its influence on people's perception regarding the causality of the information (Mizerski, 1982). For example, Mizerski (1982) suggests that when there is an overload of positivity more neutral consumers will seek for negative information because they will doubt the perfect image that is proposed by the positive reviews.

Valence is a topic that has been widely researched, but there is no consensus regarding whether positive or negative valence has dominant effects on perceived

information credibility, trustworthiness and purchase intention (Lee & Koo, 2012; Kusumasondjaja et al., 2012). Nevertheless, there are studies that have found significant effects of valence on variables such as purchase intention (Zou, Yu, & Hao, 2011) and credibility (Doh & Hwang, 2009). It is important to note that valence has been researched in the context of online reviews, concerning mostly written reviews and not video reviews (Lee & Koo, 2012).

Several studies, as found in Lee and Koo (2012) and Kusumasondjaja et al. (2012), have concluded that information of negative valence has a stronger influence than that of neutral or positive valence (Lee, Rodgers, & Kim, 2009; Lee & Koo, 2012; Xue & Zhou, 2010; Yang & Mai, 2010; Ballantine & Yeung, 2015). Lee and Koo (2012) call that phenomenon "negativity bias" and argue that people give more value to negative information especially when it is outnumbered by positive information. Zou et al. (2011) suggest that negative reviews can be more diagnostic in the eyes of, especially, low-expertise consumers. That happens because they conceive them as indicators of inferior performance, thus paying more attention to them in order to reduce possible risks (Zou et al., 2011; Vandemia, 2017).

Qiu et al. (2012) state that people tend to believe that positive reviews are caused by reasons that are not related to the product and the opposite when it comes to negative reviews. Attribution theory argues that people tend to avoid responsibility for failed choices and, oppositely, claim responsibility for successful ones (Qiu et al., 2012). Likewise, in order to minimize risk, it is possible for positive reviews to be attributed to external reasons and negative to reasons related to the product. Additionally, positivity can be seen also as kindness or compliance with the social norms and the social pressure. Another proposed perspective favoring negative reviews is that they seem to demonstrate the reviewer's independence from the brand of the product, thus resulting in higher credibility (Pentina, Bailey, & Zhang, 2015).

On the other hand, Lee and Koo (2012) provide a list of studies that have had the exact opposite results (Snyder & Cowles, 1979; Clemons, Gao, & Hitt, 2006; Gershoff, Mukherjee, & Mukhopadhyay, 2003; Jones, Sinclair, & Courneya, 2003; Pentina et al., 2015). Their explanation of this, as they call it, "positivity effect" is that people perceive positive information as more diagnostic. Pentina et al. (2015) explain a similar attitude from the psychological perspective of emotional value where consumers use positive reviews as a confirmation of their pre-purchase favorable stance towards the product. These consumers are likely to approach negative valence as having to do with external reasons, noncompliance of personal expectations, or a single unlucky encounter with the product or service.

Purnawirawan, Eisend, De Pelsmacker, and Dens (2015), agreed on the fact that there is no consensus regarding the effects of valence, but they went one step further and analyzed the negative reviews. They found that mildly negative reviews that also mention some positive aspects of a product are perceived as more useful in comparison with strictly negative reviews. They also conclude that negative reviews that gradually include more and more positive aspects enjoy increased trustworthiness because they are considered to have been written by people that actually bought the product. Furthermore, negative reviews that include positive aspects of products create the feeling that the brand does not control or censor the conversation about its products and that leads to overall higher credibility.

Another aspect that needs to be taken into consideration when evaluating the effects of message valence is the confirmation bias. Consumers with a pre-existing attitude towards a product or a service are more likely to seek and consider truthful the information that confirms their personal opinions (Qiu et al., 2012). Information that does not confirm their personal opinion is more likely to be considered as a result caused by external factors and therefore less credible (Qiu et al., 2012).

Summing up, valence is an important factor in online reviews even though there is academic inconsistency regarding whether positive or negative valence has more significant effects on several other variables. What has been demonstrated though is its significant influence on individuals (Ilgen et al., 1979). More specifically, review valence has been demonstrated to affect purchase intention (Purnawirawan et al., 2015) and trust towards the information (Kusumasondjaja et al., 2012).

The present research is based on the findings of Kusumasondjaja et al. (2012) regarding the collaborative effects of valence and source identity. Kusumasondjaja et al., (2012) found that positive reviews from known sources have greater initial trust than every alternative combination of variables in terms of valence and characteristics of the source. It was decided likewise to include review valence in this study because, even though the valence itself has been already researched in the context of social media, not much work has been done in studying the interaction between valence and source identity (Kusumasondjaja et al., 2012).

### 2.4 Dual process models

The results found in past research regarding online reviews and electronic Word-Of-Mouth (eWOM) have led several researchers to use the dual process models in order to explain the effects found (e.g. Pentina et al., 2018; Hlee, Lee, & Koo, 2018; Cheung & Thadani, 2012; Gupta & Harris, 2010). The basic goal of the dual process models is to provide an explanation of how people process information. Both models suggest two different ways of processing, the central route according to Elaboration Likelihood Model

(ELM) and the systematic processing according to Heuristic-Systematic Model (HSM), and, on the other hand, the peripheral route according to ELM and the heuristic processing as found in HSM (Chaiken, 1980; Park, Lee, & Han, 2007; Tam & Ho, 2005).

The two theories have many similarities according to Chaiken and Chen (1999). They both include two ways of processing information that are explained in a similar way. Furthermore, both models suggest that people will more likely process information in the way that requires minimal effort, namely heuristically or through the peripheral route, unless they are motivated to do otherwise. Additionally, the ELM and the HSM acknowledge the possible influence that cognitive and motivational factors can have on how people process information. But in their research, Chaiken and Chen (1999) point out some distinct differences between the two models. The ELM suggests that when either the motivation of a person to process through the central route or the ability to analyze the arguments or both increase, the value of peripheral mechanisms drops dramatically. On the contrary, HSM supports that even in this case both heuristic and systematic processes can operate simultaneously and affect the way information is being evaluated. Lastly, according to the ELM people are mainly motivated by judgement accuracy and as this motivation level varies the elaboration likelihood levels adjust accordingly. The HSM does not approach any type of motivation in this way. On the contrary, the types of the motive and the processing are considered to be independent dimensions and, according to the theory, any kind of motive can affect either or both types of processing (Chaiken & Chen, 1999).

In the context of reviews and eWOM, Cheung and Thadani (2012) published a literature analysis on how eWOM has been researched so far. They list a number of studies that have used the dual process models, such as the study from Park et al. (2007) where the ELM was used in order to research how online reviews affect purchase intention. Gupta and Harris' research (2010) is also listed in Cheung and Thadani's paper (2012). In their research, Gupta and Harris (2010) used both the ELM and the HSM in order to make predictions on how the number of eWOM recommendations affects the attitude towards a product. In the end, their predictions that were based on the ELM and the HSM were validate by the results of their experiment. Another interesting study is from Zhang, Zhao, Cheung, and Lee, (2014). Through their research, they confirmed the predictive value of the dual process models when it comes to the effects of online reviews on consumers and they proceeded in using the HSM as a theoretical foundation while studying the effects of online reviews on the consumers' purchase intention.

This thesis focuses on the Heuristic-Systematic Model of persuasion. The HSM is used in order to explain the motivations behind the influence of the experimental stimuli and whether these motivations are related to the ability of the person to process specific information, to the availability of knowledge, and to the willingness of involvement (Chaiken,

Liberman, & Eagly, 1989). It is also used in order to understand whether time and effort efficiency plays a role in the persuasive power of the stimuli towards the way people judge the validity of the message (Chaiken et al., 1989).

Starting with systematic processing, in this case the judgement depends on a thorough thinking process where the individual takes into consideration all the available information, as well as their relevance and importance. It is a more controlled reaction towards information and demands effort, mental capacity, and analysis of the information (Chaiken et al., 1989; Strack & Deutsch, 2015). For that reason, systematic processes can demonstrate differences in extensiveness (Chaiken et al., 1989). That happens because every person has different cognitive abilities, they experience different situations and circumstances, and they can have different biases (Chaiken et al., 1989).

On the other hand, heuristic processing is a more automated process where the effort from the person in order to judge the given message is limited for any reason (time restriction, lack of interest, etc.). The judgement is based on a very small and specific piece of information, thus requiring minimal research and data collection (Chaiken et al.,1989). The heuristic cues that dominate in terms of effects on the individual's final judgement are mostly superficial and easier to process, such as the length and the number of arguments (and not their quality) and the characteristics of the person arguing (e.g. attractiveness, likeability, etc.). Social stereotypes, like the authority and trustworthiness of experts, or even personal biases that can depend on past experiences can also serve as heuristic cues (Chaiken, 1987; Strack & Deutch, 2015). Some cues, such as the notion of a fast-talking communicator being more credible than a slow-talking one, have been demonstrated to be even more effective than the valence of the message (Chaiken, 1987).

According to HSM theory, heuristic and systematic processing can co-occur at the same time (Chaiken et al., 1989). The interaction between the two types of processing can cause the effects to add up and "heuristic cues may bias systematic processing, and, if the outcomes of heuristic and systematic processes are in opposition, the results of systematic processes will likely dominate" (Strack & Deutsch, 2015, p. 898).

Studies, where the HSM has been utilized in order to interpret the findings of the analyses, have demonstrated that consumers, in the context of evaluating online reviews, primarily engage in heuristic processing before they delve deeper and evaluate the information systematically (Hlee et al., 2018). Hlee et al. (2018), that focus on online reviews relevant to hospitality and tourism, support the importance of heuristic cues. They mainly stress the importance of cues regarding the source of the reviews, like identity, reputation, and expertise, and others that concern the text body of the review, like text-based and visual- based ones. Nevertheless, they mention the importance of some systematic cues as well, like the affective language and the positive or negative tone of it.

Pentina et al. (2018), also suggest that the processing of text reviews is more likely to follow the heuristic way due to several reasons. These reasons include time constraints and overload of information that lead the consumers to look for heuristic cues in order to simplify the decision-making process in terms of effort and time, but while still having in mind their need to make the best choice possible (Pentina et al., 2018). Because of that, the authors suggest that less complicated heuristic cues are more effective towards attitude formation (Pentina et al., 2018).

It has been demonstrated that consumers with low levels of involvement tend to use simple heuristic cues (e.g. the number of reviews), perceiving them as popularity indicators, and to rely on them in order to form their purchase behavior (Park et al., 2007; Pentina et al., 2018). Similarly, Gupta and Harris (2010) suggest that low involvement consumers are mostly affected by numbers rather than arguments and their quality. On the contrary, highly involved consumers value and analyze the arguments more, but when they are facing large sets of information, the overload acts as a limiting factor and causes their overall purchase intention to decrease (Pentina et al., 2018). Nevertheless, consumers that are highly involved are more likely to minimize their personal bias and move towards a choice that was recommended by online reviews if their systematic process of analysis of the given information points them that way (Gupta & Harris, 2010).

The literature discussed above has categorized visual cues and especially those having to do with numbers as heuristic. On the other hand, the arguments and the valence of the message have been categorized as systematic cues. Throughout the interpretation of the results, the Heuristic-Systematic Model will be used in order to enhance the understanding of the results, as well as provide some solid scientific basis for their explanation.

### 2.5 Credibility, trust, and persuasion

Perceived source credibility has been defined as the positive characteristics of the source that drives the receiver to accept the information provided (Ohanian, 1990). In an advertising context, it concerns the audience's reaction to a message that can be perceived as trustworthy or not (Zha et al., 2015). Although, as a construct it is defined by the receiver and its perceptions because there are many different aspects that can affect the way a person understands and gives meaning to the concept of credibility. Some of them could be cultural, social, or economic (Freeman & Spyridakis, 2004; Johnson, Kaye, Bichard, & Wong, 2007; Erdogan, 1999).

The concept of credibility is considered to be important since it has a big impact on purchase behavior (Goldfarb & Tucker, 2011), as well as on the attitude towards information (Choi & Rifon, 2002; Goldsmith, Lafferty, & Newell, 2000; Chong, Yang, & Wong, 2003;

Yoon, Kim, & Kim, 1998; Housholder & LaMarre, 2014). Furthermore, in the online space, the complexity of the Internet has made credibility a difficult to achieve, yet extremely valuable asset (McKnight & Kacmar 2006). Nowadays, more and more people use the Internet and social media in order to obtain information before making a purchase. That information seeking process includes UGC, such as written or video product reviews (Mir & Rehman, 2013). This fact points out the importance of understanding credibility within the framework of YouTube reviews.

In the context of the experiment, the credibility of the information provided by a reviewer is measured. Past studies have demonstrated that perceived source credibility has a positive and direct effect on attitude towards advertisement, perceived usefulness, and willingness to diffuse the message (Zha et al., 2015; Chang et al., 2015; Munnukka et al., 2016; Samat, et al., 2015). It has also been found to indirectly affect consumer's behavior and purchase intention (Ong & Ong, 2015; Zha et al., 2015). It is therefore important to explore the theory behind endorser/celebrity credibility and its characteristics. Celebrities, as well as non-celebrity endorsers, are used by a lot of brands and companies in order to engage the audience and promote products or services (Rifon, Jiang, & Kim, 2016). Their credibility and attractiveness are being leveraged in order to maximize the advertising effects (Spry, Pappu, & Cornwell, 2011). Especially UGC producers are under research in this case since they have been found to have increased trustworthiness (Mir & Rehman, 2013; Munnukka et al., 2016). That happens because it is believed that they share their honest opinion about a product and that they approach it without any kind of economic bias. On the other hand, celebrities are thought to promote only the positive aspects of the products because they are motivated by commercial interests (Mir & Rehman, 2013; Munnukka et al., 2016). This notion though is in contrast with the evolution of UGC as it was discussed in the previous chapters.

Additionally, UGC reviews are more credible because they are considered to include both positive and negative aspects of a product or service, thus providing a more balanced and credible critique (Mir & Rehman, 2013). Using UGC, especially through social media, in order to form an opinion about a product is extremely common nowadays (Cheong & Morrison, 2008; Mir & Rehman, 2013). Because of that "social media influencers who are held with high expertise and trustworthiness are viewed as being more influential on their followers' behaviors" (Lim et al., 2017, p. 22).

Studies have found that the three levels of credibility are expertise, trustworthiness, and attractiveness (Ohanian, 1990). Other levels have been proposed such as physical appearance (Batra, Myers, & Aaker, 1996), similarity, and cultural background (Morimoto & La Ferle, 2008). This study focuses on the first basic model that was proposed by Ohanian (1990). Ohanian (1990) started her research by studying literature in the fields of

communication, advertising, and psychology and gathering words and phrases that were used in order to measure the notion of credibility. After a long list of words was gathered, there were several stages of word elimination and statistical analyses that resulted in a scale that measured source credibility. This scale has been widely used in research (Ong & Ong, 2015; Munnukka et al., 2016; Lim et al., 2017; Till & Busler, 2000; Senecal & Nantel, 2004) and thus it can be considered to provide a solid foundation in exploring the concept of credibility.

Regarding the three basic levels, expertise refers to the source's special knowledge regarding the general category that the product or service belongs to. The expertise of the communicator addresses the psychological factor of trust in authority and research has demonstrated that the expertise of the source is positively associated with behavioral change (Ohanian, 1990). Trustworthiness is the receiver's perception of and attitude towards the source of information. The confidence that the source can provide can arguably lead to higher levels of persuasion of the message and attitude change of the receiver (Ohanian, 1990; Rifon et al., 2016). Lastly, attractiveness refers to the overall likeability of the source of information (Rifon et al., 2016). The attractiveness of the communicator can affect the initial attitude towards him/her and thus prepare the ground and make the receiver more susceptible towards accepting the message (Rifon et al., 2016). These measurements have been followed by researchers for decades and have shown overall positive results regarding advertising (Goldsmith et al., 2000; Pornpitakpan, 2004; Rifon et al., 2016; Ong & Ong, 2015; Munnukka et al., 2016).

Credibility can be affected by several factors. Often, it depends on the knowledge and information level of the audience (Ong & Ong, 2015). It has been demonstrated that the maximum effects of source credibility on behavior can be seen on subjects that have little or no knowledge and additional information, apart from the message that is conveyed by the reviewer or endorser (Munnukka et al., 2016). Research has shown that the metrics, that were talked about in a previous chapter and are a vital part of this research, also have an effect on credibility. The quantity of posts, views, and reviews, as well as the ratings, have been demonstrated to positively affect credibility and usefulness of the information provided (Mir & Rehman, 2013; Yuksel, 2016).

From the above, by combining the findings of past research on the metrics, review valence and credibility, the following hypotheses have been formulated:

H1: The review videos with high social media metrics will have higher perceived source credibility than the review videos with low social media metrics.

- H1.1: The review videos with high social media metrics will have higher perceived source trustworthiness than those with low metrics.
- H1.2: The review videos with high social media metrics will have higher perceived source expertise than those with low metrics.
- H1.3: The review videos with high social media metrics will have higher perceived source attractiveness than those with low metrics.

H2: The review videos of positive valence will have higher perceived source credibility than the review videos of negative valence.

- H2.1: The review videos of positive valence will have higher perceived source trustworthiness than the those of negative valence.
- H2.2: The review videos of positive valence will have higher perceived source expertise than the those of negative valence.
- H2.3: The review videos of positive valence will have higher perceived source attractiveness than those of negative valence.

H3: There will be an interaction effect of social media metrics and review valence, whereby the effect of high social media metrics on perceived source credibility will be the highest for reviews with positive valence.

- H3.1: The effect of high social media metrics on perceived source trustworthiness will be the highest for reviews with positive valence.
- H3.2: The effect of high social media metrics on perceived source expertise will be the highest for reviews with positive valence.
- H3.3: The effect of high social media metrics on perceived source attractiveness will be the highest for reviews with positive valence.

#### 2.6 Purchase Intention

In literature, purchase intention has been defined in several ways such as the probability of a consumer's intention to purchase a particular product (Grewal, Monroe, & Krishnan, 1998), a person's conscious consideration to proceed in purchasing a brand's product or service (Spears & Singh, 2004), and the consumer's intention to purchase a product in the future (Hsu & Tsou, 2011; Saxena, 2011). For the current study, the last

definition of purchase intention is adopted since it was judged to be more simple, yet accurate.

The Theory of Reasoned Action (TRA) has been the theoretical basis for the concept of purchase intention (Yang, Huang, Yang, & Yang, 2017). According to the TRA, "Intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior. As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance." (Ajzen, 1991, p.181). This theory includes a combination of the notions of a person's attitude towards a specific action, the person's behavioral intention and then the behavior in a linear way of influence, where one is determining the other (Yang et al., 2017). First, a person has a stance towards an action, e.g. buying a car. This attitude towards the action determines the intention that this person will probably have to buy a car and this intention will lead to the actual purchase of the car (Ajzen & Fishbein, 1977).

Purchase intention, as discussed above based on the TRA, is significantly related to actual purchase (Pavlou & Fygenson, 2006) and a lot of studies have demonstrated the relationship between purchase intention and purchase behavior (Adams, 1974; Morwitz, Steckel, & Gupta 1996; Ghosh, 1990; Chen, 2007; Tarkiainen & Sundqvist, 2005; Sun & Morwitz, 2010, Hsu & Tsoi, 2011). Furthermore, its predictive power does not stop there as it can be also used to understand the general buying process according to Ghosh (1990), as well as the effectiveness of online influence (Amaro & Duarte, 2015; Lu, Fan, & Zhou, 2016; Wu, Wei, & Chen, 2008).

There has been some criticism on the accuracy of purchase intention data (Morisson, 1979; Sun & Morwitz, 2010) but it is still, so far, the most used tool in research when it comes to purchasing. Morisson's (1979) objections had to do with the differences between stated intention and true intention, pointing out the discrepancy between them. His main point was the existence of exogenous reasons that can encourage or discourage a purchase despite the intention. Such reasons can be the sudden necessity for a specific product, for example one's car got stolen and that suddenly increased his/her intention towards buying a car, or an unexpected decrease in income, for example, one lost his/her job and previously stated purchase intention towards a product dropped because of lack of money or shift in priorities (Morisson, 1979). Similarly, Sun and Morwitz (2010) explored the three basic reasons that cause differences between intention and purchase, namely "systematic biases in reports of stated intentions... changes in explanatory variables, which cause true intentions to shift over time (e.g. unanticipated income shifts and unexpected promotions alter the distribution of true intentions) and the imperfect correlation between intentions and action" (p. 356). In their paper, they proposed a complicated model that takes

into consideration these parameters but, apart from its complexity, it works better, as they claim, with purchase information that is hard to get as mentioned above. Nevertheless, in their research they found that, although not perfectly, intentions and purchasing are positively correlated. Similarly, Morisson (1979), as well as Ghosh (1990), also acknowledged the predictive capabilities of purchase intention on purchasing.

Kotler and Armstrong's study (2010) suggests that the decision-making process has five stages. First is the recognition of the need for a product or service. Second is the information seeking process. Third is the evaluation of the alternative choices and courses of action. Fourth is the acceptance of the prevailing purchase intention towards the preferred brand and fifth is the post-purchase evaluation and the formation of an impression towards the overall process, as well as towards the brand. More or less, in all of the aforementioned stages there is space for influence from internal and external factors (Mirabi, Akbariyeh, & Tahmasebifard, 2015) and that has been demonstrated in past studies. Apart from those discussed above as they were proposed by Morisson (1979) and Sun and Morwitz (2010), factors of influence can be the prior attitude towards the product (Lim et al., 2017), the price, and the perceived value along with the changes in each one of them (Mirabi et al., 2015). Some others can be online, such as written or video reviews, recommendations, or comparisons between products, and others offline, such as a handson evaluation of the product in a store or the word of a friend.

One of these factors is Word-Of-Mouth (WOM) and its digital version e-WOM. More specifically, Dehghani and Tumer (2015) have written that purchase intention "depends largely on the product's value and recommendations that other consumers have shared, for example on social media" (p. 598). Dehghani and Tumer (2015) suggested that the valence of an online review could indeed affect the purchase intention of the consumers. Likewise, Yuksel (2016) stated that interactions can be another point of influence. The number of comments or reviews can be perceived as popularity indicators thus affecting the purchase intention (Lee, 2009), as well as increase the credibility of the information provided (O'Reilly & Marx, 2011).

Consequently, the following hypotheses have been formed:

H4: The review videos with high social media metrics will have higher stated purchase intention than the review videos with low social media metrics.

H5: The review videos of positive valence will have higher stated purchase intention than the review videos of negative valence.

H6: There will be an interaction effect of social media metrics and review valence, whereby the effect of high social media metrics on stated purchase intention will be the highest for reviews with positive valence

#### 3. Method

This chapter discusses the sampling method, the details of the final sample, the data collection and the research method that was used in order to gather data, test the hypotheses that have been drawn by the literature, and finally answer the research questions. It also includes a detailed explanation of each variable, as well as the chosen measurements for these variables. Lastly, the tools that have been used in order to collect the data and those that were used in order to analyze the data are introduced along with the analyses that have been implemented. The chapter concludes with a discussion about the reliability and the validity of the research.

# 3.1 Sample

The research units of this study are individuals since the effects of the popularity metrics and the valence of a review video on the perceived source credibility and the purchase intention of individuals are under study. The initial target was to collect a sample of 245 participants. This number was chosen after using G\*Power v3.1.3 in order to calculate the required sample size. For a small to medium effect of f=.18, that was used as a precautionary measure, and with the chance of finding significant effects at  $\beta$ =.80, G\*Power v3.1.3 showed that a sample of 245 is necessary in order to achieve sufficient statistical power.

## 3.1.1 Sampling method and distribution

Probability sampling was, unfortunately, not a feasible option for this research. Therefore, the sampling method that was used was a combination of snowball and convenience sampling. More specifically, the distribution of the survey was done using the researcher's personal social media profiles and personal network. People were asked to fill in the survey and, if possible, share it with their friends through their social media profiles. The contacts were done via private messages using Facebook, WhatsApp, Viber, and e-mails and were followed by public posts on Facebook, Reddit, and YouTube. Also, two famous Greek YouTubers were contacted via e-mail in order to promote the survey.

## 3.1.2 Descriptive statistics

In total 445 responses were collected and after cleaning the dataset from incomplete responses the dataset consisted of N=264 valid responses. The cleaning procedure is discussed in detail in the following chapters. The age of the respondents ranged from 15 to 67 years old (M=29, SD=9). The population was 59.8% female and 39.4% male, with one response in the age question being other (0.4%) and one missing (0.4%). The distribution

across conditions based on gender is shown in Table 3.1. The majority of the respondents (60%) had higher education, namely a bachelor's or a master's degree. Most of them came from Greece (50%), while 27.3% came from other European countries, 10.2% from North American countries, 7.2% from Asian countries, 1.1% from Australia, 0.4% from Ghana and 3.8% did not fill in their country of birth. The distribution to the groups as it was done automatically by Qualtrics' randomizer resulted in 26.1% of the participants being in the first group (high views on the video and positive review valence), 24.2% being in the second group (low views on the video and negative review valence), 24.6% being in the third group (low views on the video and positive review valence) and 25% being in the fourth group (high views on the video and negative valence). YouTube usage was measured on a scale from 1 to 5, with one being never and 5 being very often (M=4.23, SD=.887). The same scale was used in order to measure the frequency of watching product reviews (M=2.83, SD= 1.09). Lastly, familiarity with audio technology was measured on a scale from 1 to 5, with one being "not familiar at all" and 5 being "extremely familiar" (*M*=3.03, *SD*=1.15). 78.8% of the respondents said that they used YouTube "often" or "very often". On the contrary, the majority (66.3%) watched product reviews either "rarely" or "sometimes", and 59.4% were "slightly" or "moderately" familiar with audio technology.

Table 3.1: Distribution across experimental groups based on participant's gender

	High	Low	Low	High	Total
	views/Positive	views/Negative	views/Positive	views/Negativ	
	valence	valence	valence	e valence	
Male	26 (37.7%)	28 (43.7%)	32 (49.2%)	18 (27.3%)	104 (39.4%)
Female	42 (60.9%)	35 (54.7%)	33 (50.8%)	48 (72.7%)	158 (59.8%)
Total	69 (100%)*	64 (100%)**	65 (100%)	66 (100%)	264 (100%)***

<sup>\*1,4%</sup> of the respondents in this group answered "other" in the gender question

### 3.2 Research design

### 3.2.1 Experimental design

Since causal relations between the variables were under research, a quantitative experimental survey was conducted. The deductive approach of the quantitative methods allows moving from the hypotheses that have been drawn from the literature to their testing and to the validation or not of the expected patterns (Babbie, 2014). Moreover, quantitative methods provide the opportunity to analyze the relationships between the variables rather

<sup>\*\*1.6%</sup> of the responses in this group were missing.

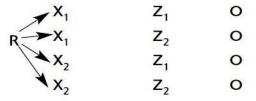
<sup>\*\*\*0.7%</sup> of the total responses were either "other" or missing

than just describe them (Punch, 2003). Lastly, by using such methods the results have more generalizable and predictive outcomes (Zhu & Sloan, 2009).

Literature suggests that the experiment is the appropriate research method in order to research the effects of an independent variable on a dependent variable or causal relations (Babbie, 2007; Zhu & Sloan, 2009; Neuman, 2013). An experiment can be handled in such a way where the manipulations of the independent variables can show whether or not they actually had an effect on the dependent variables (Haslam & McGarthy, 2004; Babbie, 2007) and thus provide greater internal validity (Trochim, 2006).

In this case, an online experimental survey was chosen. First, an online survey is easier to distribute to larger samples, it minimizes the geographical limitations, and it is cost and time efficient (Wright, 2005). Second, the digital nature of the stimuli makes the online "space", as well as the use of a computer a more natural environment for the questions under study. Lastly, the format of an experimental survey can provide additional data, such as demographics, and several other control variables that might need to be included in the analysis.

Overall, the experimental had a 2x2, post-test only, factorial design as shown in Figure 3.2. In the figure, R represents the random assignment and the arrows represent the 4 experimental groups. The first independent variable is split into two groups, X1 being the high number of views, likes, and subscribers and X2 the low number of views, likes, and subscribers. The second independent variable, valence, is represented by Z, again split into two groups, Z1 for positive review and Z2 for negative review. Lastly, O represents the post-test, namely the final observation that was done through the questions that followed the viewing of the stimulus material.



R = random assignment to the 4 experimental groups.

X1 = high number of views and subscribers

X2 = low number of views and subscribers

Z1 = positive review valence

Z2= negative review valence

O = post-test observation

Figure 3.2: Experimental design (source: Neuman, 2013)

### 3.2.2 Questionnaire design and procedure

The survey started with a statement that included all the necessary information about the study and the description of the parts that followed. It also included an informed

consent part that declared the voluntary participation of the respondents, the protection of their anonymity, the possibility for them to stop it at any given time, the approximate time that will be needed in order to complete the survey, and the researcher's contact details. Following the disclaimer, a filter question was added that regarded the participants' understanding of the Italian language. The filter question helped in collecting valid responses since understanding what is being said on the video would ruin one of the two manipulations, namely the manipulated negative or positive review of the product that was provided through the subtitles.

The first section included questions about the participants' demographics, such as, age, gender, level of education, and country of birth. The second part consisted of questions regarding the frequency of the usage of YouTube, the frequency of watching review videos on YouTube and their familiarity with the type of product that would be reviewed later on.

The next part included the stimulus material. The stimulus material was a review video of a pair of earphones by Xiaomi (Xiaomi, n.d.). The earphones were chosen for the experiment because they are technologically advanced products with everyday usability and affordable price. In comparison with other products that were considered, such as smartphones and laptops, they are simpler and as such they do not require extensive technical knowledge and consideration of a wide variety of factors in order to evaluate them. Additionally, even though earphones they are widely used in people's everyday life, brands in the audio industry do not have nearly as big an influence on the perceptions of most people as they do in the smartphone and laptop industries.

The Xiaomi brand was chosen because it is a budget brand but at the same time the products are of good quality and design. It was judged appropriate to choose a brand that will not be too recognizable from the participants in order to eliminate any bias that might exist towards a major brand in terms of preferability or avoidability.

The assignment of the respondents to one of the four experimental groups was random. In order to achieve that, a randomizer from Qualtrics was used. Following the video, the participants were asked if they watched the whole video or not.

The next part of the survey included questions regarding the concepts under research, namely, the credibility of the reviewer and the participant's purchase intention towards the product and finally a manipulation check. In order to check the effectiveness of the manipulations, the participants were asked if the review of the video was positive/fairly positive or negative/fairly negative and if the number of the views on the video was high or low. The manipulation check for the number of views provided satisfactory results. On the two videos with high social media metrics, 74.21% of the participants answered that the views were high. On the two videos with low metrics, 64.75% of the participants answered

that the views were low. Although, the results were not equally satisfactory for the manipulation check regarding the valence of the review. Despite the attempts to produce equal versions for both types of valence, the final dataset revealed a high effectiveness of the positive valence manipulation (83.3% of the respondents in the relevant groups noticed the positivity of the review) and a very low effectiveness of the negative valence manipulation (only 32.8% of the respondents in the relevant groups noticed the negativity of the review). The effectiveness of the manipulations is discussed in the limitations chapter.

At the very end, respondents were given a chance to comment on the survey and they were thanked and invited to share their feedback or questions. Lastly, a timer, that was not visible to the respondents, was used for the whole questionnaire, as well as for the parts where the video was shown. That allowed the researcher to further confirm the validity of the respondents' answers and provided great help in cleaning the dataset.

### 3.2.3 Stimuli preparation

The stimulus video was taken from an existing Italian YouTube channel after the researcher got the permission from the owners of the channel to use and manipulate their material. The Italian language was chosen because it was already decided that the sampling method would be a combination of convenience and snowball through the researcher's social network in which not many people that can understand Italian are included. That characteristic of the sample along with the researcher's fluency in the Italian language allowed the manipulation of the valence of the review by using two versions of subtitles.

There were four different versions of the same video. Through Adobe Premiere and Corel Video Studio Pro, a YouTube frame was used where the original video was embedded. This frame was edited using the "inspect" function of Google Chrome, where small changes were implemented by using basic HTML editing, such as changing the text part of the numbers of views, likes, and subscribers, in order to make two different versions of it. Version A had high numbers of views (4,494,261), subscribers (532K) and likes/dislikes (67K/13K). Version B had low numbers of views (942), subscribers (18) and likes/dislikes (26/7). As far as the numbers of likes/dislikes and subscribers are concerned, it was attempted to keep them on credible levels taking into consideration the average numbers of popular and unpopular review videos for the same type of products. More specifically, regarding the likes and dislikes balance it was decided to keep them in a ratio between 4 to 1 and 5 to 1, with the likes being more than the dislikes in both cases. The outcomes of this procedure can be found in Appendix A.

Then, for each one of these versions two more were created. One was subtitled as a positive review of the product and the second was subtitled as a negative review of the

product. This procedure provided four different versions of the stimulus material, version A/positive, version A /negative, version B/positive and version B/negative. As long as the subtitles are concerned, the video that had an already positive review of the product was translated word for word. The translation was used as the positive version. The negative version used the same text with the verbs changed to their negative form. The rest of the words were kept the same except for the changes that were necessary in order to change the review's valence. A pilot test of the text alone was implemented in a group of 10 people that were asked to rate how positive or negative each text was towards the product. The test showed the need to soften both the negative and the positive versions because on a scale from 0 to 10, with 0 being completely negative and 10 being completely positive, the mean of the negative version was M=1.7 and for the positive version was M=8.7. After the adjustments were made, .srt subtitle files were created and embedded in the video. The transcription of the video in the Italian language along with the positive and the negative version of the subtitles in the English language can be found in Appendix B.

## 3.2.4 Operationalization and measurements

As stated above, one of the manipulations in the experiment concerns the social media metrics. As literature suggests, these metrics are indicators of audience size, engagement, and popularity (Baym, 2013; Romero et al., 2011; Chung, 2017). In the specific context of YouTube review videos, the term social media metrics represents the number of views, likes/dislikes, and subscribers.

This experiment attempted to demonstrate the effects of these metrics on how the audience judges an overall unknown person performing a product review. What was expected was the validation of the literature and the connection of high social media metrics with terms like popularity/fame/celebrity in order to be able to draw conclusions that have been found in past studies about these terms, only from the metrics themselves.

The second independent variable, namely, the valence of the review, is defined by Frijda (1986) as the positive or negative tone of provided information about an object. Again, two versions for each version of the first independent variable were created, one for a positive review and one for a negative. As demonstrated above, review valence has significant effects on credibility and purchase intention, although, there is no academic consensus on the specific effects of negative and positive review valence (Lee & Koo, 2012, Kusumasondjaja et al., 2012).

This study observed the effects, and whether they are influenced by one another, of the independent variables on two dependent variables, a) perceived information credibility and b) purchase intention. Perceived information credibility is defined as the positive characteristics of the source that drive the receiver to accept the information provided

(Ohanian, 1990), and it was measured with a scale by Ohanian (1990) measuring trustworthiness ( $\alpha$ = .89), expertise ( $\alpha$ = .82) and attractiveness ( $\alpha$ = .85), as found in Munnukka et al., (2016) and as it was slightly modified by the researcher. After pilot testing the complete questionnaire with 10 participants, the feedback provided by the respondents pointed out the need for some modifications.

The ways in which this scale was changed were by removing the sub-questions "I think the reviewer was sexy" as it was judged to be inappropriate for the measurement that was intended and the change of the verb "to feel" and "to consider" in some cases with the verb "to think" just in order to make the questions more easily understandable. For the same reasons the question "I consider the reviewer sufficiently experienced to make assertions about the product" was changed to "I consider the reviewer sufficiently experienced to talk about the product" and the question "I think the reviewer is competent to make assertions about the product" to "I think the reviewer is competent enough to talk about the product". Lastly, the word "very" was removed in all 3 questions that had to do with the attractiveness of the reviewer. Factor analysis resulted in 3 factors within this scale, namely "Trustworthiness" ( $\alpha$ =.78), "Expertise" ( $\alpha$ =.71) and "Attractiveness" ( $\alpha$ =.86).

Purchase intention is defined as the consumers' intention to purchase a product in the future (Hsu & Tsou, 2011; Saxena, 2011) and was measured with Pavlou and Gefen's scale (2004),  $\alpha$ = .94, as modified by Hsu and Tsou (2011),  $\alpha$ = .89. For reasons of better comprehension after the pilot test, the question "Given the chance, I predict that I would consider buying the product that was reviewed in the future" was changed to "Given the chance, I would probably consider buying the product that was reviewed in the future". The reliability analysis of this scale resulted in a Cronbach's  $\alpha$ =.88. A list of items that as they were used in the research can be found in Table 3.2 and the full questionnaire as it was distributed can be found in Appendix C.

Table 3.2: List of items

Factor/Item	Mean	Standard
		Deviation
Purchase Intention (α=.88)	2.71	1.02
Given the chance, I would probably consider buying the	3.04	1.21
product that was reviewed in the future.		
It is likely that I will actually buy the product that was	2.59	1.16
reviewed in the near future.		
Given the opportunity, I intend to buy the product that was	2.50	1.11
reviewed in the video.		
Trustworthiness (α=.78)	3.62	0.59
I think the reviewer was honest.	3.85	0.73
I think the reviewer was trustworthy.	3.41	0.82
I think the reviewer was truthful.	3.62	0.73
I consider the reviewer earnest.	3.59	0.72
Expertise ( $\alpha$ =.71)	3.53	0.64
I think the reviewer knows a lot about the product.	3.98	0.74
I think the reviewer is competent enough to talk about the	3.56	0.83
product.		
I consider the reviewer an expert on the product.	3.06	0.85
Attractiveness (α=.86)	3.37	0.81
I consider the reviewer sufficiently experienced to talk about	3.90	0.79
the product*		
I consider the reviewer attractive.	3.09	1.06
I consider the reviewer stylish.	3.09	1.04
I think the reviewer is good looking.	3.40	1.07

*Note:* Items marked with \* were not included in the corresponding factor for the analyses.

# 3.3 Analysis

# 3.3.1 Dataset cleaning, coding, and preparation

After the data collection deadline, a total of 445 responses were recorded. This number allowed for a stricter cleaning of the dataset since the initial target was 245 valid responses. All responses with overall progress less than 89%, as well as those that lasted less than three minutes were deleted. The limit of 89% was chosen because that was the percentage of the questionnaire until, but not including the manipulations check. The three minutes were chosen as a lower limit because the videos lasted approximately three

minutes. The above led to the elimination of 17.8% of the total responses. Similarly, all responses that in the question "Did you watch the entire video", had answered either "No, I have not seen any video" or "No, for other reasons" were eliminated (2.5% of the total responses). Lastly, all the responses that had missing answers were also deleted (20.4%) except for four that were missing only the answers on the two questions that were used as manipulations check and twelve that were missing only the answer on only one of those two questions, namely the question "The number of the views on the video was: A) high, B) low". That procedure resulted in a dataset of *N*=264 valid responses.

After the cleaning of the dataset some more adjustments were necessary. The county codes were fixed in a uniform way for each answer that was given (e.g. England was changed to UK and GR was changed to Greece) according to how the country was stated in the majority of the responses. In some responses the age was changed, keeping only the number because some respondents answered, for example, "26 years old". Similar small changes were done for education, keeping in mind the differences between educational systems across the globe. These changes concerned only 6 of the respondents that chose the "Other, please specify" answer in the education question. After these adjustments were made, three new variables were created. The variable "Group" concerned the experimental group that each response was part of according to the video that was viewed and the variables "Valence" and "Social media metrics" regarded the valence of the video (positive or negative) and the number of views, likes, and subscribers of the video (high or low).

## 3.3.2 Factor analysis

The first analysis that was performed on the cleaned dataset using SPSS was a factor analysis. That was done in order to confirm the unity of the scales and their reliability. Starting with the questions measuring purchase intention, the 3 items which were Likert-scale based were entered into factor analysis using Principal Components extraction with Varimax rotation based on Eigenvalues (> 1.00), KMO = .72,  $\chi$ 2 (N = 264, 3) = 442.55, p < .001. The resultant model explained 80.9% of the variance in purchase intention. The factor found was labeled Purchase Intention. The single factor included all three items related to attitude towards purchase, more specifically, the future purchase prediction, the future purchase likelihood and the future intention to purchase that can be found in Table 3.2, Cronbach's  $\alpha$ =.88.

The same procedure was followed for the questions measuring credibility with the three factors as they were proposed by Ohanian (1990). The 11 items which were Likert-scale based were entered into factor analysis using Principal Components extraction with Varimax rotation based on Eigenvalues (> 1.00), KMO = .80,  $\chi$ 2 (N = 264, 55) = 1239.28, p < .001. The resultant model explained 66.5% of the variance in perceived source credibility.

Factor loadings of individual items onto the three factors found are presented in Table 3.3. The first factor found was labeled "Trustworthiness". The factor included four items all related to the trustworthiness of the reviewer. This included whether the reviewer was honest, trustworthy, truthful, and honest, Cronbach's  $\alpha$ =.78. The second factor found was labeled "Expertise". The factor included three items which were linked to the expertise of the reviewer, his knowledge, expertise, and competence, Cronbach's  $\alpha$ =.71. The third factor found was labeled "Attractiveness". The three items which were included in this factor all related to the attractiveness of the reviewer including whether he was considered to be attractive, stylish, and handsome, Cronbach's  $\alpha$ =.86.

Overall, both scales that were used to measure the dependent variables were reliable. Within the scale for credibility the factors came up according to the 3 categories that were included in the original scale by Ohanian (1990) with one difference. Apart from the questions that were not included from the original scale, all the rest fell under their original categories, except for the "Experienced-Inexperienced" question that, even though it was originally under the "Expertise" factor, in this case it fell under the "Attractiveness" factor. It was judged that this item did not fit the factor of "Attractiveness" and furthermore the reliability analysis showed that if the item was deleted there would be an increase in Cronbach's  $\alpha$  of .03. For these reasons this item was not included in the factor of "Attractiveness". Similarly, there would be an increase of .04 regarding the Cronbach's  $\alpha$  value for the factor of Trustworthiness if the item regarding whether the reviewer was earnest or not was removed. Although, the item was finally included in the factor of Trustworthiness because it was well fitted with the rest and fell under the original factor as proposed by Ohanian (1990).

After the factor and reliability analysis, every item that corresponded to a specific factor was calculated into a new per-factor variable. The results of this procedure were 4 new variables in the dataset, namely, the variable of purchase intention, that included 3 items, the variable of trustworthiness that included 4 items, the variable of expertise that included 3 items and the variable of attractiveness that included 3 items. All the items that were used to measure credibility, grouped into factor/variable categories, are found in Table 3.3.

Table 3.3: Factor and reliability analyses for scales for Perceived Source Credibility (*N* = 264)

Item	Trustworthiness	Expertise	Attractiveness
I think the reviewer was honest	.79	-	-
I think the reviewer was trustworthy	.79	-	-
I think the reviewer was truthful	.83	-	-
I consider the reviewer earnest	.51	-	-
I think the reviewer knows a lot	-	.67	-
about the product			
I think the reviewer is competent	-	.74	-
enough to talk about the product			
I consider the reviewer an expert	-	.86	-
on the product			
I consider the reviewer sufficiently	-	-	.56
experienced to talk about the			
product *			
I consider the reviewer attractive	-	-	.81
I consider the reviewer stylish	-	-	.81
I think the reviewer is good looking	-	-	.93
R <sup>2</sup>	.19	.1	.37
Cronbach's α	.78	.71	.86
Eigenvalue	2.09	1.09	4.13

*Note:* factor loadings above 0.30 appear in **bold** and item marked with \* was not included in further analyses.

After the factor and reliability analyses the hypotheses were tested. The data were analyzed using t-tests and two-factor ANOVAs in order to test for "the individual and joint effect of two independent variables on one dependent variable" (Pallant, 2013, p. 240). Furthermore, it was considered interesting to test for interactions between the effects of the independent variables and the familiarity of the respondents with the medium and the type of the product. In order to test for these interactions, the further analyses included ANCOVAs and Linear Regressions. The variables that concerned the familiarity with the medium, measured as YouTube usage and the familiarity with audio technology of the participants were included as co-variants in one-way ANCOVA tests. After the ANCOVA tests all the results that showed significant interactions were analyzed using Linear Regressions. Lastly, the final part of the further analyses includes a deeper look in the comments that the participants left after filling in the questionnaire. The results are

discussed below.

## 3.4 Validity and reliability

### 3.4.1 Validity

Regarding the validity of the research, the fact that the constructs used in the present research have already been used in past research and especially in relation with one another helps to ensure certain types of validity. This research measures the effects of valence, a well-studied independent variable, and the metrics, that have just recently started to be included in research, on widely studied dependent variables. That was done by conducting an online experimental survey and by using the specific stimuli that were discussed above.

The use of scales that have already been used, tested and validated in previous research that used the same concepts provides face, construct and content validity (Neuman, 2014). The results of the reliability analysis demonstrated that all the adopted scales had sufficient Cronbach's Alpha values in order to be considered reliable, at least above .7, as recommended by literature (Nunnally & Bernstein, 1978). Furthermore, the constructs were as clean of "noise" as possible, so that there would be no effect on the responses of the participants (Neuman, 2014). Lastly, the scales that were used had a wide range of measurement (5-point Likert scales) in order to make them more reliable and not force the participants towards specific answers (Neuman, 2014).

In order to ensure the internal validity of the experiment, random assignment was used to eliminate any possible selection bias. The research was not long enough in terms of time to have maturation effects or experiment mortality and there was no compensation, thus any compensatory behavior was eliminated. The data were gathered via an online survey and analyzed in SPSS, protecting the results from experimenter expectancy and the stimulus material was prepared carefully in order to minimize any testing effects.

Additionally, a small deception was implemented for the same reason, stating that due to copyright reasons the original video could not be shared and that a screen capture software had to be used that resulted in the specific visual outcome (Appendix A). Lastly, a manipulation check was used to make sure that if there was an effect it was caused by the manipulations and not by any other random factors (Neuman, 2014).

About the external validity, the experiment had an almost exact real-life procedure and material regarding the video stimulus. Nevertheless, since random sampling was impossible there were some limitations regarding generalizability that will be discussed in the limitations chapter. Lastly, some reactivity or Hawthorne effects might be present, but again this is something that the researcher could not have perfect control over (Neuman,

## 3.4.2 Reliability

This thesis is addressing reliability issues by explaining in detail the experimental design, as well as providing all the information on the scales that were used along with the details about the final analyses. The scales themselves were adopted from previous research so that reliability would be ensured by their previous use and testing (Babbie, 2014). They were also analyzed for reliability by the researcher with positive results as mentioned above.

Furthermore, all the steps that were taken in order to create the survey, the stimulus material, and the manipulations are talked about thoroughly and the final product is provided in the Appendices. In addition, all the concepts that were used in every part of this thesis have been extensively described and explained.

Concluding, the fact that a quantitative survey-experiment was used in order to gather the data together with the computer-based statistical analyses minimized the chances for researcher's biased effect on the data gathering procedure, as well as in the interpretation of the data. All the above steps were taken in order to allow the replicability/repeatability of the research as a whole.

### 3.5 Conclusion

In this chapter, a detailed presentation of the research design was provided together with the operationalization of the concepts behind the variables. Also, the technical aspects of the study, such as the sampling method, the material preparation, the data collection, and the analysis were discussed. In the end, the actions taken in order to enforce the reliability and the validity of the research were presented. The following chapters concern the results of the hypothesis testing and the discussion based on the findings. Finally, the limitations are being pointed out together with suggestions for future and more extensive research.

## 4. Results

## 4.1 Hypothesis testing

Independent sample t-tests and two-factor ANOVAs were implemented in order to test the hypotheses. H1, predicted a significantly higher average perceived credibility on the groups that viewed the videos with high social media metrics than those that viewed the videos with low social media metrics. Consequently, H1.1 predicted a similar difference between the groups on the factor of trustworthiness, H1.2 on the factor of expertise and H1.3 on the factor of attractiveness. The results of the t-tests showed that the groups that viewed the videos with high social media metrics had a significantly higher average perceived source trustworthiness (M=3.70, SD=0.59) than those that viewed the videos with low social media metrics (M=3.53, SD=0.57), t(262) = 2.30, one tailed p=.011, d=0.29. Similar results came up regarding the second factor, namely the groups that viewed the reviews with high social media metrics had a significantly higher average perceived source expertise (M=3.65, SD=0.58) than those that viewed the videos with low metrics (M=3.41, SD=0.69), t(249.24)=3.07, one tailed p=.001, d=0.38. Lastly, the results on the factor of attractiveness were also significant. The differences regarding the perceived source attractiveness were significant between the groups with high social media metrics (M=3.29, SD=1.02) and the groups with low social media metrics (M=3.09, SD=0.83), t(254.85) =1.79, one tailed p=.038, d=0.22. Based on these results, hypotheses H1.1, H1.2 and H1.3 are accepted. Hypothesis H1 is therefore accepted since there were significant differences on all three factors of credibility.

Moving on to the second independent variable, the valence of the review, H2 predicts that the groups with positive review valence will have a significantly higher average perceived credibility than those with negative review valence and on the same pattern, H2.1 predicts the same difference between positive and negative review valence groups on the factor of trustworthiness, H2.2 on expertise, and H2.3 on the factor of attractiveness. Three t-test were performed, testing the effects of review valence on the average means of all three factors. The t-test for H2.1 showed a marginally insignificant effect on trustworthiness when testing for positive review valence (M=3.56, SD=0.60) and negative review valence (M=3.68, SD=0.56), t(262)=1.64, one tailed p=.052. The t-test for H2.2 showed non-significant effects on the factor of expertise between positive review valence (M=3.53, SD=0.62) and negative review valence (M=3.54, SD=0.68), t(262)=0.05, one tailed p=.482. Lastly, regarding H2.3 the results on attractiveness were also non-significant when testing for positive valence (M=3.26, SD=0.88) and negative valence (M=3.12, SD=0.99), t(262)=1.23, one tailed p=.110. These results show no significant differences on the average perceived credibility in none of its three factors, between the positive and the

negative valence groups and thus H2, H2.1, H2.2 and H2.3 are rejected.

As far as H3 is concerned, it assumes a joint effect caused by both the independent variables, valence and social media metrics together on perceived credibility. The analysis of the three credibility factors follows the same way as above. H3.1 predicts a joint effect on trustworthiness. A two-way analysis of variance yielded a main effect for social media metrics F(1, 260)=5.33, p=.022, partial  $\eta^2=.02$ , such that the average perceived source trustworthiness was significantly higher for high social media metrics (M=3.70, SD=0.59) than for low social media metrics (M=3.53, SD=0.57). The main effect of valence was nonsignificant, F(1, 260) = 3.08, p=.080, between positive review (M=3.56, SD=0.60) and negative review (M=3.68, SD=0.56). However, the interaction effect was significant, F(1, 1)260) = 8.28, p=.004, partial  $\eta^2$ =.03 indicating that the effect of social media metrics was greater in the positive valence condition than in the negative valence condition. More specifically, the descriptive statistics revealed that the combination of high metrics and positive valence had the highest average perceived trustworthiness (M=3.73, SD=0.62). On the other hand, the combination of low metrics and positive valence had a negative effect on trustworthiness. This combination of variables reached the lowest average perceived trustworthiness (M=3.37, SD=0.53) than any other combination of the independent variables. The difference between the high (M=3.66, SD=0.57) and low metrics (M=3.70, SD=0.65) when the valence was negative was marginal. These results provide evidence in order to accept H3.1. The joint effects are demonstrated in Figure 4.1.

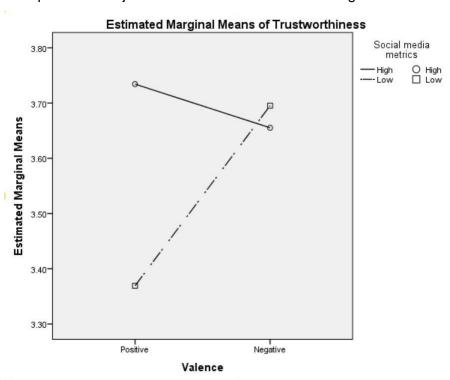


Figure 4.1: Interaction effect of Social Media Metrics and Valence on Trustworthiness.

The same assumptions were made about expertise in H3.2. Expertise was subjected to a two-way analysis of variance having two levels of message valence (positive and negative) and two levels of social media metrics (high and low). The effect of the metrics was significant (p=.002) and the effect of the valence was insignificant (p=.931). The main effect of message valence yielded an F(1, 260)=0.01, p=.931, indicating that the mean change score was insignificantly affected for positive valence (M=3.53, SD=0.62) and negative valence (M=3.53, SD=0.67). The main effect of the metrics yielded an F(1, 260)=9.38, p=.002, partial  $\eta^2$ =.04 indicating that the mean change score was significantly higher in the videos with high metrics (M=3.65, SD=0.57) than in those with low metrics (M=3.41, SD=0.69). The interaction effect was insignificant, F(1, 260)=0.73 p=.395. The results lead to the rejection of H3.2.

Lastly, H3.3 concerns the attractiveness factor of credibility. Attractiveness was subjected to a two-way analysis of variance having two levels of message valence (positive and negative) and two levels of metrics (high and low). The effect of the metrics was insignificant (p=.078) and the effect of the valence was insignificant (p=.223). The main effect of message valence yielded an F(1, 260)=1.50, p=.223, indicating that the mean change score was insignificant between positive valence (M=3.26, SD=0.88) and negative valence (M=3.12, SD=0.99). The main effect of metrics yielded an F(1, 260)=3.14, p=.078, indicating that the mean change score was insignificantly higher in the videos with the high metrics (M=3.29, SD=1.02) than in those with the low metrics (M=3.09, SD=0.83). The interaction effect was insignificant, F(1, 260)=0.00, p=.998. The outcome is similar with the one before and thus, H3.3 is also rejected. As a result, H3 is partially accepted since there were significant results in one out of the three factors of perceived source credibility.

The rest of the hypotheses concerned the effects of the independent variables on purchase intention. H4 predicted that the groups that viewed the review videos with high social media metrics will have a significantly higher average stated purchase intention than those that viewed the videos with low social media metrics. A t-test showed that the groups that viewed the videos with high social media metrics did have a significantly higher average stated purchase intention (M=2.97, SD=1.03) than those that viewed the videos with low metrics (M= 2.44, SD=0.94), t(262)=4.31, p<.001, t=0.54. The results allow the acceptance of H4.

The fifth hypothesis claimed an effect of review valence on purchase intention, with the positive review valence leading to a significantly higher stated purchase intention than negative review. The t-test showed no significant differences on stated purchase intention between positive review (M=2.70, SD=1.00) and negative review (M=2.72, SD=1.04), t(262)=0.51, p=.959. Therefore, H5 is rejected.

Lastly, H6 predicted a joint effect of review valence and social media metrics on

purchase intention. The latter was subjected to a two-way analysis of variance having two levels of message valence (positive and negative) and two levels of metrics (high and low). The effect of the views was significant (p<.001) and the effect of the valence was insignificant (p=.902). The main effect of message valence yielded an F(1, 260)=0.01, p=.910, indicating that the mean change score was insignificantly affected from positive valence (M=2.71, SD=1.00) and for negative valence (M=2.72, SD=1.04). The main effect of social media metrics' yielded an F(1, 260) = 18.41, p<.001, partial  $\eta^2$ =.07 indicating that the mean change score was significantly higher in the videos with high metrics (M = 2.97, SD = 1.03) than in those with the low metrics (M = 2.44, SD = 0.94). The interaction effect was non-significant, F(1, 260)=1.66, p=.193. Based on these results, H6 is rejected.

## 4.2 Further analysis

## 4.2.1 Interactions between the independent variables and co-variates

In order to explore the data and search for interactions, some further analyses were implemented. A one-way ANCOVA was conducted on the influence of review valence on purchase intention. Review valence had two levels (positive and negative) and the effects were controlled for the respondents' YouTube usage. The results showed no significant interaction between review valence and YouTube usage, F(1, 260)=0.29, p=.592. Similarly, the results were insignificant when controlling for the respondents' familiarity with audio technology, F(1, 260)=0.44, p=.506.

The one-way ANCOVA that was conducted on the effect of social media metrics, measured in two levels (high and low), on purchase intention, controlling for YouTube usage also showed insignificant interactions, F(1, 260)=1.58, p=.210, whereas the test that controlled for the familiarity with audio technology was marginally insignificant, F(1, 260)=2.94, p=.088.

The same tests were implemented for all three factors of credibility. Trustworthiness was subjected to a one-way ANCOVA with two levels of message valence (positive and negative) and controlling for the respondents' YouTube usage. The test showed insignificant interactions between valence and YouTube usage, F(1, 260)=0.41, p=.525. The second one-way ANCOVA that was testing the interaction effects of review valence and familiarity with audio technology on trustworthiness had insignificant results as well, F(1, 260)=0.04, p=.837.

Furthermore, concerning the interactions between the social media metrics and the two co-variates on trustworthiness, a one-way ANCOVA showed a significant interaction when testing the effect of social media metrics on trustworthiness and controlling for YouTube usage. The main effect of social media metrics yielded an F(1, 260)=5.85, p=.016, partial  $\eta^2=.02$ , showing significant difference between the groups with high social media

metrics (M=3.70, SD=0.59) and those with low social media metrics (M=3.53, SD=0.57) on trustworthiness. The main effect for YouTube usage was insignificant F(1, 260)=2.63, p=.106 and the interaction effect was significant, F(1, 260)=4.11, p=.044, partial  $\eta^2$ =.02. On the other hand, the one-way ANCOVA that tested the effect of social media metrics on trustworthiness, controlling for familiarity with audio technology showed insignificant interaction between the independent variable and the co-variate, F(1, 260)=2.31, p=.129.

On the factor of expertise all tests showed insignificant interactions between the independent variables and the co-variates. Both ANCOVAs that tested the interaction between review valence and YouTube usage (F(1, 260)=0.99, p=.320) and between review valence and familiarity with audio technology (F(1, 260)=1.15, p=.284) on expertise had insignificant results. Likewise, the results of the ANCOVAs that tested the effects of social media metrics on expertise were insignificant when controlling for YouTube usage, F(1, 260)=2.30, p=.131, as well as when controlling for familiarity with audio technology, F(1, 260)=0.03, p=.855.

The last dependent variable that was tested was attractiveness. A one-way ANCOVA conducted on the effect of review valence that included two levels (positive and negative) on attractiveness, controlling for YouTube usage showed insignificant interaction between the independent variable and the co-variate, F(1, 260)=0.16, p=.686. On the other hand, the test that controlled for familiarity with audio technology demonstrated a significant interaction with review valence F(1, 260)=4.28, p=.040, partial  $\eta^2=.02$ . The main effect of valence was insignificant, F(1, 260)=2.51, p=.114 and the main effect of audio technology familiarity was significant, F(1, 260)=21.10, p<.001.

Lastly, two one-way ANCOVAS were conducted on the effect of social media metrics on attractiveness. Social media metrics included two levels, high and low. When testing for YouTube usage, the one-way ANCOVA yielded an F(1, 260)=5.86, p=.016, partial  $\eta^2$ =.02. The main effect of social media metrics showed a significant difference, F(1, 260)=7.30, p=.007, partial  $\eta^2$ =.03, between the groups with high social media metrics (M=3.29, SD=1.02) and the groups with low social media metrics (M=3.09, SD=0.83). The main effect of YouTube usage was insignificant, F(1, 260)=1.85, p=.174. The same test when controlling for familiarity with audio technology yielded an insignificant interaction with social media metrics, F(1, 260)=2.48, p=.117, on attractiveness.

All the significant results were tested further with Linear Regressions. The one-way ANCOVA test showed a significant interaction between social media metrics and YouTube usage on the dependent variable of trustworthiness. Among the groups with high social media metrics, a linear regression was conducted to predict trustworthiness based on YouTube usage. Significant results were found, F(1, 133)=7.46, p=.007,  $R^2=.05$ . This result implies that YouTube usage significantly predicts perceived trustworthiness ( $\beta=-.23$ ,

p=.007), when the social media metrics are high. On the contrary, when applying the same test on the cases that had low social media metrics, the results were insignificant, F(1, 127)=0.08, p=.785.

The second significant interaction was between review valence and familiarity with audio technology on the dependent variable of attractiveness. A linear regression was conducted to predict perceived attractiveness based on familiarity with audio technology among the groups with positive valence. The results were insignificant, F(1, 132) = 3.25, p=.074. When selecting the cases with negative valence, the same linear regression showed significant results, F(1, 128) = 21.78, p<.001,  $R^2 = .15$ . The findings show that familiarity with audio technology significantly predicts perceived attractiveness ( $\beta = .38$ , p<.001) when the valence is negative.

The last significant interaction was the one between social media metrics and YouTube usage, also on attractiveness. Among the groups of high social media metrics, a linear regression that predicted perceived attractiveness based on YouTube usage was conducted. The test results were significant, F(1, 133)=6.88, p=.010,  $R^2=.05$  and thus it can be supported that YouTube usage significantly predicts perceived attractiveness when the social media metrics are high ( $\beta=-.22$ , p=.010). On the other hand, the same cannot be supported when the social media metrics are low, since the outcome of the same test was insignificant, F(1, 127)=0.62, p=.433, when selecting only the cases with low social media metrics.

### 4.2.2 Data from the comments

From the total sample (*N*=264), 12.12% of the participants left comments after completing the survey. In their majority, they concerned the research, details and suggestions for the video, or the fact that some participants did not pay attention to the social media metrics. Nevertheless, all of them (21.85%) that discussed the manipulations mentioned the metrics and none of them the valence of the review. Furthermore, only one comment was about the video having high views.

Some of the participants did notice the low views but commented positively on the review ("Nice review but very low views") and the product ("Product seems good but very low views youtube"). Others noticed the low views and commented positively on the product but associated the low views with the reviewer's competence ("940 views, very low. I have these earbuds they are ok, but I think that the views have to do with him because maybe he is not good at it and that's why he has low views", "He has low views and even lower subscribers maybe it is his first time, or he does something wrong. The product seems very nice."). Additionally, there were those that perceived the low views as an indicator of lower quality of the product ("I think that the product is no good because he has low low views",

"Bad views bad product") and oppositely the high views as an indicator for the high quality of the product ("Really a lot of views, the product must be really good")

Of course, such a number of quotes does not provide sufficient proof about the importance of social media metrics, but the comments are in accordance with the rest of the findings and allow for some further understanding of the results.

## 5. Discussion

Hypotheses testing provided some interesting results. First, it was demonstrated that the social media metrics of a review video do affect credibility in all three factors. The effects were small on the factor of trustworthiness and the factor of attractiveness. The test regarding the effect of the metrics on the expertise factor showed small to medium results. It can be concluded that the effect of the metrics, even if small, is present in the results. Furthermore, these effects are positively related to credibility, namely, the results showed that the experimental groups that were exposed to a review video with high social media metrics perceived it as more credible than those exposed to a review video with low social media metrics. More specifically, when the video had higher social media metrics the reviewer was perceived as more trustworthy, as more expert, and as more attractive than in the cases where the video had low social media metrics.

The findings are consistent with past literature that had used the metrics as indicators of influence and engagement (Romero et al., 2011; Baym, 2013). They also confirm the connection of high metrics to higher credibility and influence (De Micheli & Stroppa, 2013; Romero et al., 2011, Gerhards, 2017) and are in accordance with studies that demonstrated the positive effects of the metrics in the context of online reviews on credibility (Mir & Rehman, 2013; O'Reilly & Marx, 2011). Additionally, when it comes to the specific field of video reviews, the findings are also consistent with studies that argue the positive effects of the quantity of views on information credibility (Mir & Rehman, 2013; Yuksel, 2016).

As far as the second dependent variable (purchase intention) is concerned, the results showed that social media metrics had a medium effect on it. In this part, there is also consistency with past findings regarding the effects of recommendations and word of mouth on purchase intention (Dehghani & Tumer, 2015). The results are in accordance with Lee's (2009) and Yuksel's (2016) studies that supported the positive effects of the metrics, that are perceived as popularity indicators, on the purchase intention of the audience.

It can consequently be understood why the metrics play such an important role and can be a decisive factor when it comes to professional decisions and investments (Baym, 2013). Furthermore, the effects of the metrics explain why original content creators have been targeted by advertisers in order to promote their brands and engage the audience (Burgess, 2012; Rifon et al., 2016).

The results regarding the second independent variable were somewhat unexpected. No effects were found between the valence of the review and perceived credibility. The tests on the factors of expertise and attractiveness had insignificant results and on the factor of trustworthiness they were marginally insignificant (one tailed p=.052), with the

review of negative valence being perceived as more trustworthy than that of positive valence. These findings are not in accordance with what has been demonstrated in past research. Even though there was inconsistency concerning the effect size of positive and negative valence ((Lee & Koo, 2012; Kusumasondjaja et al., 2012; Purnawirawan et al., 2015), most studies support the effects of valence on credibility. Past research demonstrated significant effects of valence on both credibility and purchase intention (Zou et al., 2011; Doh & Hwang, 2009; Purnawirawan et al., & Dens, 2015; Kusumasondjaja et al., 2012), but these effects have not been confirmed by the current study. The main difference between the current and past studies is that past studies concerned written reviews and the current one concerned video reviews.

Also, it is important to mention that in the current research the manipulation check regarding the groups that included a video review of negative valence did not provide good results. In contrast with the groups that viewed a review of positive valence where 83.3% of the participants found the review to be positive/somewhat positive, from the negative valence groups only 32.8% of the participants answered that the video review was negative/somewhat negative. That will be further discussed on the limitations chapter. Based on that fact it can be argued that the participants perceived the positive review as positive and the negative as somewhat negative at best. Even with that assumption the results are inconsistent with past literature (e.g. Mir & Rehman, 2013; Munnukka et al., 2016) that has demonstrated significant differences between positive and more balanced reviews.

There was a similar absence of effect also when testing for the effects of valence on purchase intention. Studies have demonstrated the effects of review valence on purchase intention in the past, but the present findings are not in accordance with them (Lee & Koo, 2012; Kusumasondjaja et al., 2012; Zou et al., 2011; Purnawirawan et al., 2015). Therefore, it cannot be supported that the positive review acted as a recommendation and it is not possible, based on the current results, to assume that findings, such as those from Dehghani and Tumer (2015), regarding the effects of social media recommendations on purchase intention can be applicable on review videos.

When testing the hypotheses that predicted a joint effect of valence and social media metrics the results were non-significant on their majority. Based on past literature that suggests the collaborative effect of source identity and valence on trustworthiness and, more specifically, the positive joint effects of positive valence and known sources, it was decided to extend this prediction to all three factors of credibility, as well as purchase intention (Kusumasondjaja et al., 2012). The outcomes of two-way ANOVAs led to the rejection of the hypothesis that regarded the effects on purchase intention and the partial acceptance of the hypothesis regarding credibility. Even though there were no effects found

on purchase intention, as well as on two out of the three factors of credibility, there were significant results on the factor of trustworthiness. This result partially confirms the findings of Kusumasondjaja et al., (2012) regarding the joint effects of source identity, in this case translated to the difference in social media metrics, and review valence. Although, what is interesting is that the combination of positive valence and low social media metrics showed substantially lower credibility than any other combination of variables.

The results of this research point out the importance of social media metrics on purchase intention and credibility in all three factors as they were proposed by past literature (Ohanian, 1990) and were slightly modified by the researcher and the outcomes of factor and reliability analyses. It can be argued that high metrics are perceived as popularity indicators and that they alone add more credibility to the source and enhance its influence on the audience. The audience understands them as proof of the expertise, the trustworthiness, and the attractiveness of the source. That leads the audience to assume that the source is sufficiently capable and knowledgeable and that can also be translated into higher attractiveness of the products that the source choses to demonstrate and/or promote. The valence, as it has been manipulated in this case, seemed to play no role in the participants' evaluation process. In the single case where the valence showed significant results, it can be supported that it actually interfered with the effects of the metrics. Low metrics and positive review resulted in a substantial drop in credibility. It can be therefore assumed that this combination of variables created suspicions for the audience and caused its credibility on the given information to drop lower than in any other combination of variables.

The further analyses that followed hypothesis testing controlled for interaction effects between the independent variables, social media metrics and valence, and the respondents' familiarity with the medium of YouTube, as well as their familiarity with the type of the product on the dependent variables. Most combinations showed insignificant results, but among them there were some interesting outcomes.

Frequency of YouTube usage was shown to significantly predict trustworthiness when the social media metrics are high. More specifically, in the cases when the review video had high social media metrics, higher YouTube usage led to lower perceived trustworthiness. In the same context of high social media metrics, YouTube usage was found to be a significant predictor of attractiveness as well and similarly, the more frequent the usage of YouTube, the lower the perceived attractiveness when the video has high social media metrics. That might be the case because familiarity with the medium has led to increased exposure of the users to the way it works. Thus, the continuous viewing of sponsored videos, advertisements and product placements, especially by the most successful YouTube channels might have led to the assumption that a video that talks

about a product and has high views comes from a channel that is fairly famous. Consequently, it is highly likely for the provided information to be biased because there might be economic relations between the reviewer and the brand. Other professional reasons might have been assumed, such as the reviewer attempting to be likeable to the brand or promoting the product because of affiliation, where when people buy the product shown in the video, the reviewer gets a percentage.

Regarding attractiveness, the same exposure to content that might have led to the aforementioned assumption might have also led to a different approach towards content types, such as review videos. People that have watched a lot of videos have come across content of high quality in terms of videography, image and audio quality, and scripting, as well as reviewers that take thorough care of their appearance, including both the way they look and speak. Usually this kind of content belongs to famous channels. That might have caused participants to compare the videos they viewed for this study with others that they have seen online, and that comparison possibly explains the lower perceived attractiveness because the high social media metrics could have raised the expectations.

Lastly, in the cases that viewed a video of negative valence the analysis showed that familiarity with audio technology significantly predicts attractiveness and that higher familiarity leads to lower attractiveness. Higher knowledge on the type of product allows for a better analysis of the information that is provided. It is also possible that people with higher familiarity with audio technology might have come across the specific pair of headphones in another video, review, or online-store. It is thus likely that they did not agree with what was said by the reviewer or that there was a discrepancy between what they knew about the product and what was said in the video. That could have caused the lower perceived attractiveness of the reviewer. Summing up, the further analyses showed that people that use YouTube more frequently are more likely to have less trust on a review video when it has high social media metrics. Furthermore, it was demonstrated that it is likely for a reviewer to be considered less attractive by audiences that use YouTube more often when his/her videos have high social media metrics. Similarly, it likely for a reviewer to be perceived as less attractive by an audience that has better knowledge of the type of product that is under review when the review is negative/fairly negative.

Another fact that rose from the data collection concerns the comments that some participants left after they filled up the questionnaire. Despite their small number, the fact that they only concerned the social media metrics and especially the cases where the social media metrics were low gives an idea regarding the way audiences approach the metrics and the meaning that they give to them. It can arguably be extra supporting evidence on the claim that people do pay attention on the views and they make assumptions about either the product or the reviewer based only on that single piece of information.

All the above allow to bring the Heuristic-Systematic model into the discussion. In past research that incorporated the HSM, the social media metrics have been categorized as heuristic cues (Pentina et al., 2018; Gupta & Harris, 2010) and the valence as systematic (Hlee et al., 2018). The easy-to-process heuristic cue of the metrics was demonstrated to have an effect on the audience's perceptions and intentions. When the metrics were high they were also found to interact with the familiarity of the respondents with the medium and the type of product probably causing them to assume specific things that lead to lower perceived trustworthiness and attractiveness.

On the other hand, the more systematic cue of the valence that requires more effort, attention, and maybe would create a need for some further research was not taken into consideration at all except for the case where the review was negative. When the review was negative people that are more familiar with audio technology found the reviewer less attractive as was discussed above. Additionally, when the metrics were low, thus pointing towards distrust regarding the information provided and the review was positive, that only worked negatively in terms of credibility. This explanation is in accordance with the way Chaiken (1987) has presented the Heuristic-Systematic model, as well as with the way it was applied in research by several scholars. Pentina et al., (2018) and Hlee et al. (2018), suggested that the audience primarily uses a heuristic process of information when it comes to reviews and Gupta and Harris (2010) supported that consumers are affected more by numbers than by arguments. Even though the first two were researching text reviews in different industries and the latter were making a distinction between low and high involvement consumers, it can be argued that their findings are applicable also in the case of video reviews of technology products according to the results of this study.

More specifically, as Hlee et al. (2018) concluded in their paper about hospitality and tourism online reviews, the heuristic cues concerning the source and especially reputation, identity, expertise, and authority have the strongest connection to perceived source credibility and usefulness of the information in the context of online reviews. The present study demonstrated that this relation exists also in video reviews of technology products. Additionally, some light was shed regarding the effect of these cues on purchase intention, where Hlee et al. (2018) claimed that not much research has been done so far. Unfortunately, the results of the valence cue did not provide clear results and thus not much progress was achieved with regards to their suggestion for further research on the effects of systematic cues in reviews.

To conclude, it is necessary to come back to the research questions and their answers. The first research question regarded the effect of social media metrics in technology product review videos on YouTube, on viewers' attitudes towards the product under review and towards the information provided. More specifically, as explained by the

two sub-questions, the effects on the viewers' information credibility and purchase intention were under research. The existence of an effect on information credibility and purchase intention that is caused by the social media metrics is supported by the results.

Furthermore, this effect has been found to be positive in relation to the metrics, namely, high social media metrics lead to higher credibility and purchase intention in comparison with low social media metrics.

The second research question together with the sub-questions that follow it, asked whether any effects on the same dependent variables are caused by the valence of the review. The analysis provided non-significant findings in that regard. Despite the limitations, that are discussed in the next chapter, the results concluded that there is no effect caused by the valence of the review on the viewers' perceived source credibility and purchase intention.

Lastly, the third research question and sub-questions concern the interaction between the effects of popularity metrics and review valence on credibility and purchase intention. From the answer to the second research question, namely the non-existent effects of valence on those two variables, one can conclude that there cannot be any joint effects. The analysis demonstrated the expected absence of effect but there was one important detail. On one of the factors that came up after the factor analysis, more specifically the factor of trustworthiness, there was a small yet significant effect when testing for a joint effect of popularity metrics and review valence. Figure 4.1 shows that the interaction effect was mostly present in the positive valence reviews. In these groups, the perceived source trustworthiness differs substantially between those that viewed a review with high metrics and those that viewed a review with low metrics. On the other hand, the difference between high and low metrics in the groups that viewed the review with negative valence is very small. That can be seen as an indicator of the effects of the metrics on the trustworthiness aspect of source credibility. It could have been perceived by the participants as a cue that reflects the legitimacy of the source and therefore the higher metrics were perceived as an indicator that the source is real and can be trusted and, on the contrary, low metrics might have raised suspicions regarding the review being planted or biased for any reason. Overall though, since credibility was measured as the set of the three factors (expertise, trustworthiness, and attractiveness) it can be concluded that there were no significant effects on credibility caused by social media metrics and review valence together and the same can be supported for purchase intention.

## 6. Limitations and future research

Hereby, the limitations of the research are discussed. First, the sampling method was not random. Random sampling would have been impossible for this study because of the minimal limitations regarding the population under research. That consequently causes problems with the generalizability of the results. Apart from the fact that it was not random, the final sample that came up after the cleaning of the dataset was dominated by Greek respondents (50%). That is a result of the sampling method that was a combination of convenience and snowball through the researcher's network. Another limitation concerning the sample was overrepresentation of females in it and the uneven distribution across the experimental groups in terms of gender, as can be seen in Table 3.1. Since the distribution of the survey was done online with the aforementioned methods and the distribution in groups was done automatically through Qualtrics, there was no way for the researcher to have control over that aspect of the study. Lastly, there was no control for possible biases of the participants concerning preference or not about the brand or the type of product. A different way of randomization that would produce a more equal distribution across the experimental groups regarding gender and ethnicity together with a wider range of products reviewed, at least in terms of brands if not in terms of type as well, might have assisted in diminishing such limitations.

Another limitation concerns the manipulations. The manipulations check showed that the manipulated review valence was somewhat ineffective. More specifically, only 32.8% of the participants found the negative version of the review to be negative. That could have been the cause of the non-significant effects of valence after the analysis and the hypothesis testing. More intensely polarized versions of the reviews, with one being clearly positive and the other clearly negative, could have better demonstrated the effects of review valence on the dependent variables. Another way to research the effects of valence would be as Floh, Koller, and Zauner (2013) did. They approached valence more as a spectrum rather than a dipole. Having more experimental groups allowed for a wider representation of diverse intensity of valence, from extremely positive to extremely negative. That approach would probably provide more insights regarding the effects of valence and their joint effects with social media metrics. At the same time, such a study would require larger sample size and the time needed to conduct it would be greater as well because of the extended data collection, as well as all the procedures that would be needed in order to clean, prepare, and analyze the data.

Some limitations also exist that concern the variable of the social media metrics. First of all, there are differences in the ways diverse audiences perceive the magnitude of such numbers. For example, the most popular review video for the iPhone X, as of June 20,

2018, in the Greek language has 493,270 views and the channel hosting it, that is the most popular unboxing and review channel in Greece, has approximately 440 thousand subscribers (Unboxholics, n.d.). On the other hand, the most popular review video in the English language has 12,771,221 views and the channel that is hosting has approximately 5.6 million subscribers (EverythingApplePro, n.d.). There is arguably a very big difference in perspective between the two cases. A filter question regarding the country that would redirect the participants to different versions of the stimulus material where the social media metrics are adjusted in proportion to the YouTube landscape of the country might have addressed any possible issues that these differences might have caused.

Another option in order to research the effects further within the metrics could be to have experimental groups with diverse combinations of views, likes, dislikes, comments and subscribers, in order the explore their effects as single units of stimuli, as well as their joint effects. Such a study would provide insights on whether and at what degree the effects are caused by the numbers of views, likes/dislikes, subscribers, or comments, as well as the interactions between them. That again would require an extremely lengthier research in terms of time and actual length of the study, a larger sample, as well as more advanced statistical analysis.

A follow up to this a study, could be an extension of all the findings of past literature regarding the influence and effects of celebrity on purchase intention and credibility on social media metrics. More specifically, using the assumptions of the effects of celebrity on those variables but express celebrity only by social media metrics on a totally unknown reviewer and/or product. Such a study would allow the connection of the metrics with the notion of celebrity and further provide scientific basis for a term such as "numerical reputation".

Lastly, future research regarding the valence in online video reviews would add to the existing literature about review valence. Even though with regards to text review valence there is no consistency in terms of whether positive or negative valence affects more the audience, there has been no research so far in the video review context. Such studies could also include the HSM and contribute to past findings regarding the effects of valence as a systematic cue.

## 7. Conclusion

The results of the study partially confirmed findings from past literature. Taking into account the effects of the social metrics that were found to have increased purchase intention and credibility in all of its three factors, this study can be considered as another small contribution in the set of arguments of those that emphasize the importance of social media metrics and how much they affect the audience's perceptions. Furthermore, by demonstrating these effects the strategic placement of the metrics in these platforms can be better understood. Additionally, the necessity of the metrics for content creators that, apart from becoming recognizable and successful on what they do, are also interested in monetizing their content via sponsorships and advertisements is explained. What brands are looking for when they sponsor content or advertise through it on social media is credibility of the source and influence on the audience's behaviors, and high social media metrics were shown to have a positive effect on those two factors.

On the other hand, it was not possible to take a specific stance and shed some extra light on the debate about review valence. Since, in the current study, valence was not demonstrated to play a significant role, not much can be extracted with regards to this issue. Nevertheless, it can be stated that as long as a review video has high social media metrics, if valence does have an effect, that effect will be enhanced by the effects of high metrics.

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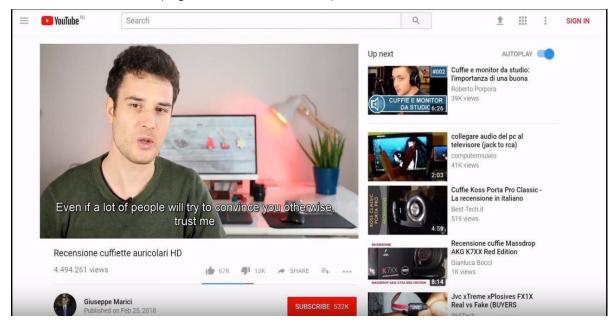
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# Appendix A

Version A of the video (High social media metrics)



## Version B of the video (Low social media metrics)



## Appendix B

Transcription of the video, positive and negative versions of the subtitles

## Original

[0:00-0:13] Anche se molti cercheranno di convincervi del contrario, fidatevi, non e' necessario spendere 180 euro per le nuove apple AirPods per ascoltare buona musica, e queste cuffiette auricolari ne sono la dimostrazione.

## Positive

Even if a lot of people will try to convince you otherwise, trust me, it is not necessary to spend 180 euros for the new Apple AirPods in order to listen to nice music, and these earphones are the proof of it.

### Negative

Even if many will try to convince you otherwise, trust me, it might not be necessary to spend around 180 euros for, let's say, the new Apple AirPods in order to listen to music, and these earphones could be the proof of it.

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### Original

[0:14-0:23] Andiamo con ordine e vediamo che nella confezione sono inserite tre gommine adattatori, XS, S e L, le M invece sono già' installate, e un sacchettino morbido per il trasporto

### Positive

Starting, we see that in the package there are 3 rubber adaptors, XS, S and L, and the M are already installed on the earphones, as well as one sturdy little bag for transporting them.

### Negative

Starting, we see that in the package there are 3 rubber adaptors, XS, S and L, and the M are already installed on the earphones, as well as one little bag for transporting them.

......

Original

[0:24-0:40] Il primo aspetto che salta all' occhio, e' l'inclinazione a 45 gradi del dotto audio, e questo, questa particolare inclinazione si adatta perfettamente ai vostri padiglioni auricolari, e per questo motivo, nonostante siano delle cuffie in-ear, non vi daranno fastidio anche dopo lungo tempo.

#### Positive

The first aspect that catches the eye is the 45 degree inclination of the audio duct. This particular inclination adapts to your ears and for that reason, despite being in-ear headphones, they will not become uncomfortable even after long periods of use.

## Negative

The first aspect that catches the eye is the 45 degree inclination of the audio duct. This particular inclination is adapting to your ears but, since they are in-ear headphones, they will probably become uncomfortable after long periods of use.

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### Original

[0:41-0:48] Oltretutto sono anche abbastanza leggere a rispetto, relativamente alla loro qualità' costruttiva 17 grammi, che non pesano assolutamente.

### Positive

Nevertheless, they are also light enough, in relation to the quality of their construction, 17 grams, they are not heavy at all.

### Negative

Also, they are light enough, in relation to the quality of their construction, 17 grams, puts them in the middle range.

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### Original

[0:49-1:03] La camera acustica in una lega di ferro ed alluminio, molto resistente, definita con una sabbiatura e un trattamento anodizzante per evitare i graffi. La parte superiore invece, ha dei cerchi concentrici incisi, che danno, insomma una caratteristica particolare al design.

### Positive

The acoustic chamber is made of an alloy of iron and aluminum, very durable, defined with a sanded finish and anodized in order to avoid scratches. The upper part has concentric circles engraved, that give in the end a particular characteristic at the overall design.

# Negative

The acoustic chamber is made of an alloy of iron and aluminum, of questioned durability, defined with a sanded finish and anodized in order to avoid scratches. The upper part has concentric circles engraved, that give in the end a particular, though for some, a bit outdated characteristic at the overall design.

.....

### Original

[1:04-1:20] La stessa qualità' costruttiva si ritrova anche nel controller del volume, con tre tasti che funzionano perfettamente con android anche in chiamata, per rispondere, mettere giu', avviare anche l'assistente vocale, silenziare il microfono e poi il controllo del volume, purtroppo, con l'iphone, tutti questi tasti non funzionano.

#### Positive

The same quality construction can be found also at the volume controller, with 3 buttons that work flawlessly with android, also during calls, allowing the user to answer, use the assistant with vocal commands, silence the microphone and also control the volume. On the other hand, with iPhone, these buttons do not work.

# Negative

The same construction can be found also at the volume controller, with 3 buttons that can work only with android, also during calls, allowing the user to answer, use the assistant with vocal commands, silence the microphone and also control the volume. On the other hand, with iPhone, these buttons do not work at all.

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#### Original

[1:21-1:45] Il filo invece, inizialmente mi aveva lasciato un po perplesso, molto lungo, un metro e 25, e realizzato in TPA che e una classe di materiali plastici, gommato, emm, mia ha un po' deluso in rispetto alle piston 3 che avevano un intreccio in tessuto, in realtà' però', informandomi, ho capito che questa ehh, questa particolare composizione e' molto resistente, dovrebbe essere molto resistente alle sollecitazioni meccaniche.

#### Positive

The cord, in the beginning let me down a little bit, too long, one meter and 25 cm, made by TPA, a type of plastic material, rubberized. It let me a bit down in comparison with the Piston 3 that had a braided fabric wrapped cord, but in reality, after searching for it, I understood that this particular composition is very durable against mechanical stress.

# Negative

The cord let me down a little bit, too long, one meter and 25 cm, made by TPA, a type of plastic material, rubberized. It let me a bit down in comparison with the Piston 3 that had a braided fabric wrapped cord, and in reality, after searching for it, I understood that this particular composition is not very durable against mechanical stress.

\_\_\_\_\_\_

### Original

[1:45-1:56] E andiamo a parlare delle specifiche. Abbiamo una risposta in frequenza, compresa tra 20 e 40000 hertz, una impedenza di 32 Ohm, e una pressione sonora, dichiarata di 98db.

#### Positive

And regarding the specifications, we have a frequency response from 20 to 40000 hertz, an impedance of 32 Ohm and a sensitivity rating of 98dB

# Negative

And regarding the specifications, we have a frequency response from 20 to 40000 hertz, an impedance of 32 Ohm and a sensitivity rating of 98dB

------

## Original

[1:57-2:15] A livello tecnico, sono ispirate, continuano sulla strada delle Hybrid Dual Driver, hanno due driver audio, uno ad armatura bilanciata e due di tipo dinamico. Quelle dinamici si occupano più' delle basse frequenze, invece quello ad armatura bilanciata privilegia i medi e alti. In accoppiata a questi driver, c'è un nuovo diaframma in grafene.

#### Positive

At the technical level, they stay on the path of Hybrid Dual Driver. They have two audio drivers, one at balanced armature and two dynamic drivers. The dynamic drivers produce

mostly the low frequencies and the balanced armature enhances the middle and the high frequencies. Together with these drivers there is a graphene diaphragm.

## Negative

At the technical level, they stay on the path of Hybrid Dual Driver. They have two audio drivers, one at balanced armature and two dynamic drivers. The dynamic drivers produce the low frequencies, but the balanced armature struggle with the middle and the high frequencies. Together with these drivers there is a graphene diaphragm.

.....

## Original

[2:16-3:00] Se state cercando un suono molto sbilanciato sui bassi, corposo, diciamo il suono a cui siete abituati, se usate solitamente delle cuffie o degli auricolari di fattura abbastanza economica o medie, beh, allora, queste non sono la scelta giusta, perché' hanno un particolare sound molto analitico, molto preciso soprattutto sulle alte frequenze, che talvolta potrebbe risultare quasi fastidioso ad un orecchio allenato. In realtà' e questione di abitudine. Bisogna un po' imparare ad ascoltarle, ascoltare queste cuffie, e scoprirete che nelle musiche che ascoltate di solito ci sono degli strumenti, ci sono delle sfumature sonore, che magari, non vi eravate mai accorti che esistessero

#### Positive

If you are searching for a sound with enhanced bass, full-bodied, let's say, the sound that you are used to if you are using mostly earphones of low or medium quality, well then these are not the right choice. That is because they have a specific sound, very analytic, very precise, especially on the high frequencies, that sometimes can be almost annoying in the untrained ear. In reality, it is a matter of what one is used to. These earphones need to be learned to listen to, and then you will discover that in the music that you usually enjoy, there are instruments, there are acoustic nuances that maybe you never knew that they existed.

#### Negative

If you are searching for a sound with enhanced bass, full-bodied, let's say, the sound that you are used to, well then these are not the right choice. That is because they have a specific sound, not that analytic and precise, especially on the high frequencies, that sometimes can be almost annoying. In reality, it is a matter of what one is used to. These earphones take some time to get used to listening them, and then you might discover that in the music that you usually enjoy, there are some parts of the overall sound missing, so maybe, some small parts of your favorite songs do not exist anymore.

# Appendix C

# **Thesis Questionnaire**

Start of Block: 1) Intro & Filter
Introductory Info The following survey is part of the data collection for my Master's thesis in the program Media & Business at Erasmus University Rotterdam. You will be asked to answer some questions. In the first part, some general data are being collected, mostly regarding the demographics of the participants. The second part consists of a video that you are kindly requested to watch from beginning to end. The video lasts approximately 3 minutes. Then the third and last part consists of some questions regarding your thoughts after watching the video. Please note that the data collection is completely anonymous and you are free to stop the procedure whenever you wish to. The whole process will require approximately 10 minutes of your time. Thank you very much. If you would like to contact me for any reason, send me an email at: dimitrioskourelis@student.eur.nl
FilterQ Do you speak Italian (Level B2 or higher)?
○ Yes (1)
O No (2)
Skip To: End of Survey If Do you speak Italian (Level B2 or higher)? = Yes
End of Block: 1) Intro & Filter
Start of Block: 2) Demographics
Age What is your age?

Gender What is your gender?
O Male (1)
○ Female (2)
Other (Please specify) (3)
Edu What is the highest degree or level of education you have completed? If currently enrolled, mark the previous grade or highest degree received.
C Less than highschool (1)
O Highschool degree or equivalent (2)
O Bachelor's degree (3)
Master's degree (4)
O PhD (5)
Other (please specify) (6)
Country What is your country of birth? (Please answer with the full name of your country of birth OR the country code, e.g. DE for Germany, IT for Italy etc.)

# End of Block: 2) Demographics

Start of Block: 3) YouTube Usage & Tech Knowledge
YouTubeUsage How often do you use YouTube?
O Never (1)
O Rarely (2)
O Sometimes (3)
Often (4)
O Very often (5)
WatchingReviews How often do you watch review videos (videos where someone shows a product and talks about it, in terms of specs, performance, quality, etc.)?
O Never (1)
O Rarely (2)
O Sometimes (3)
Often (4)
O Very often (5)

AudioTechFamiliarity How familiar are you with audio technology (Earphones, Headphones,

Earbuds, Microphones etc)
O Not familiar at all (1)
O Slightly familiar (2)
O Moderately familiar (3)
O Very familiar (4)
C Extremely familiar (5)
End of Block: 3) YouTube Usage & Tech Knowledge
Start of Block: IntroVideo
IntroVid Please watch the following video from beginning to end. Due to copyright reasons, we were not allowed to provide the original video, so in order to use it, we had to use a screen capture software. You can double-click the video screen in order to activate the full-screen mode.
End of Block: IntroVideo
Start of Block: 4A) HighNumPosReview
HighPos

HighPosTimer Timing	
First Click (1)	
Last Click (2)	
Page Submit (3)	
Click Count (4)	
End of Block: 4A) HighNumPosReview	
Start of Block: 4B) LowNumNegReview	
LowNeg	
LowNegTimer Timing	
First Click (1)	
Last Click (2)	
Page Submit (3)	
Click Count (4)	
End of Block: 4B) LowNumNegReview	
Start of Block: 4C) LowNumPosReview	
LowPos	

Start of Block: 5) Intro	
End of Block: 4D) HighNumNegReview	
Click Count (4)	
Page Submit (3)	
Last Click (2)	
First Click (1)	
LowNegTimer Timing	
LowNeg	
Start of Block: 4D) HighNumNegReview	
End of Block: 4C) LowNumPosReview	
Click Count (4)	
Page Submit (3)	
Last Click (2)	
First Click (1)	
LowPosTimer Timing	

Entirevideo Did you watch the entire video?
○ Yes (1)
O No, there were technical problems. (2)
O No, I did not want to keep watching. (3)
O No, I have not seen any video. (4)
O No, for other reasons. (Please specify) (5)
IntroMeasures Please answer the following question by choosing the appropriate answer on how much you agree or disagree with the statements:
End of Block: 5) Intro
Start of Block: 6) Purchase Intention
BuyFuturePredict Given the chance, I would probably consider buying the product that was reviewed in the future.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)

BuyFutureLikelihood It is likely that I will actually buy the product that was reviewed in the
near future.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)
BuyIntention Given the opportunity, I intend to buy the product that was reviewed in the video.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)
End of Block: 6) Purchase Intention
Start of Block: 5) Credibility

Honest I think the reviewer was honest.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)
Trustworthy I think the reviewer was trustworthy.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)

Truthful I think the reviewer was truthful.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)
Earnest I consider the reviewer earnest.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)

Knowledgeable I think the reviewer knows a lot about the product.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)
Competent I think the reviewer is competent enough to talk about the product.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)

Expert I consider the reviewer an expert on the product.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)
Experienced I consider the reviewer sufficiently experienced to talk about the product.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)

Attractive I consider the reviewer attractive.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)
Stylish I consider the reviewer stylish.
O Totally disagree (1)
O Disagree (2)
O Neither agree nor disagree (3)
O Agree (4)
O Totally agree (5)

Start of Block: 8) Conclusion & Comments	_
End of Block: 7) Manipulation Check	
O Low (2)	
O High (1)	
NumbersCheck The number of the views on the video was:	
Negative / fairly negative (2)	
O Positive / fairly positive (1)	
ValenceCheck The review on the video was:	
Start of Block: 7) Manipulation Check	
End of Block: 5) Credibility	
O Totally agree (5)	
O Agree (4)	
O Neither agree nor disagree (3)	
O Disagree (2)	
O Totally disagree (1)	
Handsome I think the reviewer is good looking.	

Comments If you have any comments, please leave them here:
Email This is the end of the survey. Thank you very much for participating. Please let us
know if you have any questions or remarks, as well as, if you would like to be informed
about the final results of the research at dimitrioskourelis@student.eur.nl
End of Block: 8) Conclusion & Comments