The Impact of Virtual Reality in the Motion Picture Industry regarding Brand Coolness, Emotional Responses, and WOM

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September, 2020

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Acknowledgements

Despite the atypical months all of us have been witnessing, 2020 will also mark the end of this project and that would not have been possible without the help and support of inspiring people.

First and foremost, I would like to thank Prof. Sandra Loureiro for the constant dedication, availability, and for the thoughtful and encouraging words that have always motivated me to proceed each step of this project with enthusiasm.

Second, a huge thanks to each of the 67 participants who were willing to take part in the virtual reality experiments. I was the first person most of the participants met after being in confinement for several weeks due to COVID-19, and everyone welcomed me with kindness. I do not have the words to fully describe those moments, but I deeply appreciate the trust and the time every single one of the participants took to not only participate but also to understand what this project was about.

In addition, to ISTAR-IUL for the availability and for making it possible for me to proceed with the project in their facilities.

I would also like to thank my family. My mother, for the patience and confidence in me since day one. My brothers, for being an example and always push me to do better in the most supportive way.

Last but not least, to my friends and teammates, for the incredible insights, for the understanding, and also for the good moments. I'm surrounded by amazing people who I have a lot to learn from.

Abstract

The main goal of the present dissertation is to understand how virtual reality impacts the motion picture industry regarding the constructs of brand coolness, empathy, sympathy, and word-of-mouth in comparison with the traditional 2D screens, while also considering the importance of the movie content. Thus, the study consists of a quantitative research which is based on a factorial research design, considering the interactions between the two technological formats (2D and VR) and the two movies ("Crow: The Legend" and "Is Anna Ok?").

The chosen methodology allows us to determine that a movie experienced in VR has more positive scores regarding brand coolness, emotional responses (empathy and sympathy), and WOM, than when the same movie is presented in 2D screens. However, the Two-Way ANOVA analysis also determines that the movie content itself affects brand coolness perceptions and sympathy responses more than the technological format. Meaning that the story content has a higher influential power on how the movie is perceived by the audience when considering these constructs than the technological format. On the other hand, regarding empathy responses and WOM, the technological format proved to have a higher impact than the story content.

Additionally, further analysis allowed us to understand how brand coolness is perceived regarding movies and how emotional responses to movies influence the audience's attitudes and coolness perceptions. The theoretical and managerial implications of these findings are also explained.

Keywords: Brand Coolness, Cinematic Virtual Reality, Emotional Responses, Motion Picture, Storytelling, WOM.

JEL: M31 – Marketing and Advertising: Marketing
JEL: M39 – Marketing and Advertising: Other

Resumo

O principal objetivo da presente dissertação é compreender como a realidade virtual tem impacto na indústria cinematográfica no que diz respeito à construção de brand coolness, empatia, simpatia e word-of-mouth em comparação com os tradicionais ecrãs 2D, considerando também a importância do conteúdo do filme. Assim, o estudo consiste numa pesquisa quantitativa que se baseia numa pesquisa factorial, considerando as interações entre os dois formatos tecnológicos (2D e VR) e os dois filmes ("Crow: The Legend" e "Is Anna Ok?").

A metodologia escolhida permite-nos determinar que um filme experienciado em RV tem pontuações mais positivas em relação a brand coolness, respostas emocionais (empatia e simpatia), e WOM, do que quando o mesmo filme é apresentado em 2D. Contudo, a análise ANOVA bidirecional determina também que o próprio conteúdo do filme afeta mais as perceções de brand coolness e as respostas de simpatia do que o formato tecnológico. O que significa que o conteúdo da história tem um poder de influência maior na forma como o filme é percecionado pelo público relativamente a estes conceitos do que o formato tecnológico. Contrariamente, considerando as respostas de empatia e WOM, o formato tecnológico provou ter um maior impacto do que o conteúdo da história.

Adicionalmente, uma análise mais aprofundada permitiu-nos compreender como brand coolness é percecionado em relação aos filmes e como as respostas emocionais aos mesmos influenciam as atitudes e perceções de brand coolness do público. As implicações teóricas e de gestão destas descobertas são também explicadas.

Palavras-chave: Brand Coolness, Realidade Virtual Cinematográfica, Respostas Emocionais, Filme, Narrativa, WOM.

JEL: M31 – Marketing and Advertising: Marketing
JEL: M39 – Marketing and Advertising: Other

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List of Abbreviations

e.g.	For example (abbreviation for exempli gratia)
e-commerce	Electronic commerce
et al.	And others (abbreviation for et alii)
H	Hypothesis
Q	Question
VR	Virtual Reality
SBC	Self-Brand Connections
WOM	Word-of-mouth
URL	Uniform Resource Locator

1. Introduction

According to Escalas (2004), people tend to naturally think in story-like form. In fact, literature contends that the way humans process narratives is similar to the way we, as individuals, process and interpret our experiences. Narratives can strengthen emotional connections, can stimulate imagination, memories, passion, and help us make sense of the world and, in Laer, Visconti and Feiereisen's (2018, p. 485) words, movies are "seeds of narratives". As Kerrigan (2018) contends, movies have narrative potential that allows individuals to understand personal and societal issues. Moreover, Kerrigan (2018) argues that movie importance lay in their ability to tell myths, despite the technology used to do so. Considering the high-risk investment on movie production, the story is, therefore, a decisive factor to a movie's success in the box office, but not the only one. In order to better predict early-stage box office performance and improve the success rate of a movie, marketing and management research has contributed to the development of forecasting models and decision-support tools that are based on quantitative and qualitative methods.

Regarding marketing literature on the construct of brand coolness, Warren, Batra, Loureiro and Bagozzi (2019) contend that being cool is a positive and desirable trait by both consumers and brands. In fact, being considered cool can result in favorable and positive brand attitudes and also higher WTP (willing-to-pay) and WOM (word-of-mouth). These identified benefits of brand coolness could contribute to a movie's success rate. In fact, according to literature, WOM, negative or positive, has a crucial impact in the motion picture industry, because how the movie's quality is perceived by the audience and critics, can determine box office performance. Nonetheless, to our knowledge, the construct of brand coolness in the marketing literature regarding fictional brands, such as movies, has not yet been explored in literature.

Furthermore, even though the story is determinant, technology has always played a major role in the motion picture industry since the beginning of cinema (Eliashberg, Elberse & Leenders, 2006). As research contends, there has been research on the several applications of virtual reality (VR) since the 1990s. The popularity of this technology has been reaching different industries such as tourism, health issues, education, marketing and also the motion picture industry. The technology selling point is in its ability to provide users with an immersive experience, in which they feel like actually being in a simulated world and – as Shin and Biocca (2017) argue – at the core of a VR immersive experience is the empathy factor. Empathetic responses are often

considered by authors and film critics the ultimate experience a spectator can have from a movie. Therefore, considering the multisensory stimuli the technology is able to provide, there has been high investment in VR in the motion picture industry, however, cinematic virtual reality is still at an early stage. As Mateer (2017) and Ross (2020) claim, new VR synesthetic techniques and directing methods need to be adapted and developed considering the opportunities but also the limitations the technology still holds.

Pondering on the uncertainty of virtual reality in the Classical Hollywood Cinema and the investment risk in the motion picture industry – a hedonistic industry with a high production cost associated – this dissertation considers marketing literature in order to explore the consumers' perception of Cinematic Virtual Reality compared with standard (2D) movies. More precisely, the present dissertation entails an attempt to apprehend the following research questions:

I. How important are the content and technological format in which a movie is presented, regarding the constructs of brand coolness, emotional responses (sympathy and empathy), and WOM?

II. How does marketing literature on brand coolness apply to fictional brands, more precisely to movies?

III. How do emotional responses to movies impact consumers' attitudes and coolness perceptions?

With these research objectives and literature review in mind, the innovation of this work is to relate the motion picture industry with marketing constructs of storytelling, brand coolness, and WOM, while simultaneously considering the application of virtual reality, not only in Cinematic Virtual Reality but also as a marketing tool that provides an experience with the ability to strengthen emotional connections with consumers. To our knowledge, such an approach has not yet been explored in literature. Ultimately, this dissertation will try to give insights to the marketing literature on the understanding of brand coolness and on the importance of content within the application of virtual reality as a technology able to provide consumers with immersive experiences. Additionally, it is also this study's objective to contribute to the understanding of the opportunities and challenges virtual reality holds in the motion picture industry, and how the application of the technology in the industry is perceived by consumers regarding emotional responses – more precisely, empathy – and also brand coolness.

1.1 Structure of Dissertation

The dissertation is structured in six distinct parts. The first part, the Introduction, presents the constructs which will be approached throughout this research, as well as the defined objectives and main purpose of the thesis. Secondly, the Literature Review is where the main concepts are analysed according to existent empirical research. Afterward, the chosen research model and methodology are explained in the Empirical Study chapter, according to this study's objectives and to the gap in literature it aims to fulfil. The fourth part, Data Analysis, is where the interactions between the different constructs are treated and analysed, considering the research questions and hypotheses. Those same interactions and will be discussed and interpreted in the fifth chapter, the Results. Finally, in the Conclusions and Implications, the main findings are presented, as well as the managerial implications, limitations, and also future research.

Introduction
- Presentation of the topics and their relevance for the Marketing Literature
- Identification of the gap this research fills
- The establishment of the research questions and objectives
- Structure of Dissertation

Literature Review
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- The Rise Of Virtual Reality in Marketing
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- Cinamtic Virtual Reality
- Brand Personality and Brand Coolness

Empirical Study
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- Definition of the Measurement Tables
- Selected stimuli for the experiment: Movies
- Data Collection Process

Data Analysis
- Data Treatment
- Profile of the sample

Results
- Descriptive analysis
- Hypothesis analysis

Conclusions and Implications
- Finding overview
- Managerial and Theoretical Implications
- Limitations and Future Research

Figure 1.1 Structure of the dissertation

(Source: own elaboration)

2. Literature Review

The present chapter includes a summary of the concepts and respective subjects considered relevant for this study. The concepts explored in this chapter were reviewed and taken from scientific and academic literature of researchers that have contributed to those same constructs.

The first concept explored will be Storytelling. This concept will begin with a brief explanation of the meaning of storytelling and how it has it has made its way into the field of marketing. The main benefits of storytelling as a marketing strategy will be presented and reviewed. Additionally, it is also important to underline how storytelling can be used through different mediums including the recent technological devices, such as virtual reality.

Virtual Reality is increasingly becoming popular in several industries, such as in the motion picture industry and also in the marketing field. Major movie producers and also independent VR developers are increasingly investing more in virtual reality and exploring the new synesthetic methods that can be applied to the technology. Further, as marketing research contends, this medium provides brand and customer experiences that through technology are more immersive. Regarding the rise of virtual reality, the concepts of experience and brand attitudes will be considered.

The third concept analysed in this Literature Review will be brand personality, more specifically focusing on Brand Coolness. According to literature, despite being a desirable trait by both brands and customers, the perception of cool is also subjective. Therefore, it is important to research and consider which characteristics can impact the perception of coolness regarding fictional brands, such as, movies.

After careful research on the three main concepts – storytelling, virtual reality, and brand coolness – it will be important to analyse how these three concepts and respective subjects can relate and be applied to the motion picture industry.

2.1 The Motion Picture Industry

The motion picture industry is an industry based on hedonistic consumption, "hedonistic consumption designates those facets of consumer behavior that relate to the multisensory, fantasy and emotive aspects of one's experience with products" (Hirschman & Holbrook, 1982, p. 92). In

addition to movies, hedonistic products also include music, fashion, and the arts. According to Gazley, Clark and Sinha (2011), hedonism consumption is related to aesthetic consumption, however, despite their interrelation, the concepts of aesthetic and hedonism should be distinguished. On the one hand, aesthetics regards the appreciation of beauty, on the other hand, hedonism is about the pleasure, and "pleasure is a part of appreciation and appreciation leads to a hedonistic response" (Gazley, Clark & Sinha, 2011, p. 854). Despite its hedonist nature, the motion picture industry, or the film industry, is one of the highest profitable industries in the world and has been growing over the last decades. In the United States alone the box office revenue went from 2.75 U.S. billion dollars, in 1980, to 11.89 billion dollars, in 2018. However, as we can observe, in 2019 the numbers slightly dropped (please see annex A.1), compared to the previous year, to 11.32 billion dollars (Statista, 2020).

Notwithstanding the importance of looking at the box office performance, Eliashberg, Hui and Zhang (2007) argue that this way to measure a film's success tends to only consider the performance of a movie after being produced. According to Eliashberg, Hui and Zhang (2007), the motion picture industry is a risky venue regardless of the market size and the investment interests, because the production also has a high cost associated. Furthermore, even major studios usually launch less than 20 films per year, meaning that a single film can have a crucial impact on the financial performance of a studio's annual profitability (Joshi & Hanssens, 2009). Therefore, the success of a film should not only be measured based only on the box office revenue (BOR) performance but should also consider the return-on-investment (ROI) and the story itself as the piece of information that will determine the production investment (Eliashberg, Hui, & Zhang, 2007).

Considering the motion picture industry, Laer, Visconti and Feiereisen (2018, p. 485) define narrative as a "viewer's consumption of the filmed story through which he or she does not just watch the film but also makes it 'viewable' in the first place". In other words, a filmed story is converted into a narrative through consumption. This process facilitates an experience of entering the narrative world and may provoke effects on the audience. Laer, Visconti and Feiereisen (2018, p. 485) further contend that, movies are predominantly of storytelling nature, and that they're the "seeds of narratives". Additionally, Cutting (2016) argues that movies are stories, narratives, and in general, movie narratives tend to have a similar structure to other domains, such as novels, plays, and oral stories. However, there are particular constraints, methods, and constructions that are

unique of this medium. As Cutting (2016, p. 1713) explains, "Narratology is the study of stories and story structure and the ways these affect our perception, cognition, and emotion", and as a story form, movies can be a fine art, emotionally absorbing, educational, thought-provoking and entertaining.

2.1.1 Marketing the Motion Picture Industry

In addition to the story itself, in order for a film to succeed, studios also had to start investing more money in marketing initiatives. As previously mentioned, a single movie with low performance on the box office can have a high negative impact on the studios' annual profitability. Thus, it didn't take long until the motion picture industry started investing on promotion and branding. Mingione, Cristofaro and Mondi (2020, p. 311) contend that brands "are widely considered as symbols socially constructed by all the stakeholders (Gyrd-Jones & Kornum, 2013; Hatch & Schultz, 2010; Iglesias, Ind, & Alfaro, 2013) who may benefit from a cognitive, self-expressive and emotional experience when entering into a relationship with the brand (Aaker, 1996; de Chernatony, Cottam, & Segal-Horn, 2006).". Regarding the motion in picture industry, movies are also considered brands, but more precisely, fictional brands, "A fictional brand is a non-existent brand used in artistic or entertainment productions – paintings, books, comics, movies, TV serials, etc." (Muzellec, Kanitz, & Lynn, 2013, p. 400).

According to Steinhart (2018), even though publicizing production is a common practice in the industry since the 1910's, it was only in the 1950's that promotional featurettes - a marketing practice that captures the production of a certain film and usually takes five to ten minutes - started being developed. By the 1960's, preselling a film was already considered a standard routine and promotional featurettes played a fundamental role in the motion picture industry, which at the time was looking uncertain, "(…) when the film business was an erratic affair, promotional featurettes provided a new means to render the drama of filmmaking and the spectacle of global production, thus helping to sell Hollywood movies." (Steinhart, 2018, p. 97). Steinhart (2018) further argues that promotional featurettes are a process of textuality, or paratexts, that allows the audience to formulate and attribute meaning to the movie, while also providing the industry with a way of narrativizing the production process and operations for public consumption.

Considering existent literature there are several factors that can influence a movie's performance in the market. According to Hennig-Thurau, Houston and Sridhar (2006), there are two main factors that are decisive on the box-office performance, which are studio actions (such as promotion and distribution efforts), and the movie's quality (perceived by critics and the audience).

Regarding the movie's quality perceived by the audience and critics, word-of-mouth (WOM) can have a crucial impact in the motion picture industry, "if people receive negative WOM about a movie, they more likely will not watch because it indicates the movie is a bad one. Negative WOM is known to influence consumers' decisions much more strongly than positive" (Yoon, Polpanumas, & Park, 2017, p. 145). According to Yoon et al. (2017), the reason for this is because negative WOM is less biased by the production studios and promotional initiatives. Additionally, considering Craig, Greene and Versaci (2015, p. 63), even though WOM has historically always been a powerful force, nowadays, due to the advents of the internet and social media, it no longer requires face-to-face interactions and is able to reach a wider audience faster than ever, "A film that opens on a Friday night and does not meet audience expectations is doomed by e-buzz to experience a shrinking audience on a Saturday". Craig, Greene and Versaci (2015) further explain that in order to minimize financial risk, studios try to employ several marketing and management strategies, such as having a portfolio with different movie genres, agreeing on co-production deals, or even acquire finished movies.

Moreover, Desai and Basuroy (2005) contend that the genre of a movie, the star power and the critics' reviews are also three main factors that play a crucial influential role in a movie's market performance. In fact, Gazley, Clark and Sinha (2011) based on empirical research, similarly argue that variables such as, genre, symbolism, promotional strategy, country of origin, price, sequels, friends and actors and directors (star power) are all factors that can influence consumers' product choice at the cinema. Furthermore, considering Desai and Basuroy (2005), it is important to identify these variables and how can they influence consumers, due to the studios' high investment when producing a film, which makes decisions regarding the genre or the story type crucial and determinant in the overall studio's performance.

In fact, several researchers agree that genre is one of the most important variables, because the way an audience categorizes film genres, is similar to the way individuals categorize their everyday life, "Individuals naturally tend to categorize stimuli in order to simplify their

environments, which facilitates the development of schemas or mental representations of the world" (MacWhinney, 2015 as cited in Nalabandin and Ireland, 2018, p. 1638). Further, considering the article *Narrative Processing: Building Consumer Connections to Brands*, Escalas (2004) contends that stories allow people to attribute meanings and to make sense of the world. Escalas (2004) further argues that the meaning, and consequently the value, attributed to a brand can often be the outcome of being part of a story. Moreover, through narrative processes, brands might be considered more or less valuable and important to consumers. Escalas (2004) explains that the brands we tend to consider more valuable are the ones that connect with our self, which agrees with consumer research general claims, that people construct and tell narratives to create a self-identity. Additionally, brands with higher SBC (Self-brand Connections) are considered more favorable and increase the likelihood of purchase. Further, Escalas (2004, p. 177) describes that narrative structure plays a crucial role when it comes to brands' ability to connect with the self and to create meaning, "The narrative SBC framework identifies one specific mechanism by which narratives are able to create meaning: through their structure.".
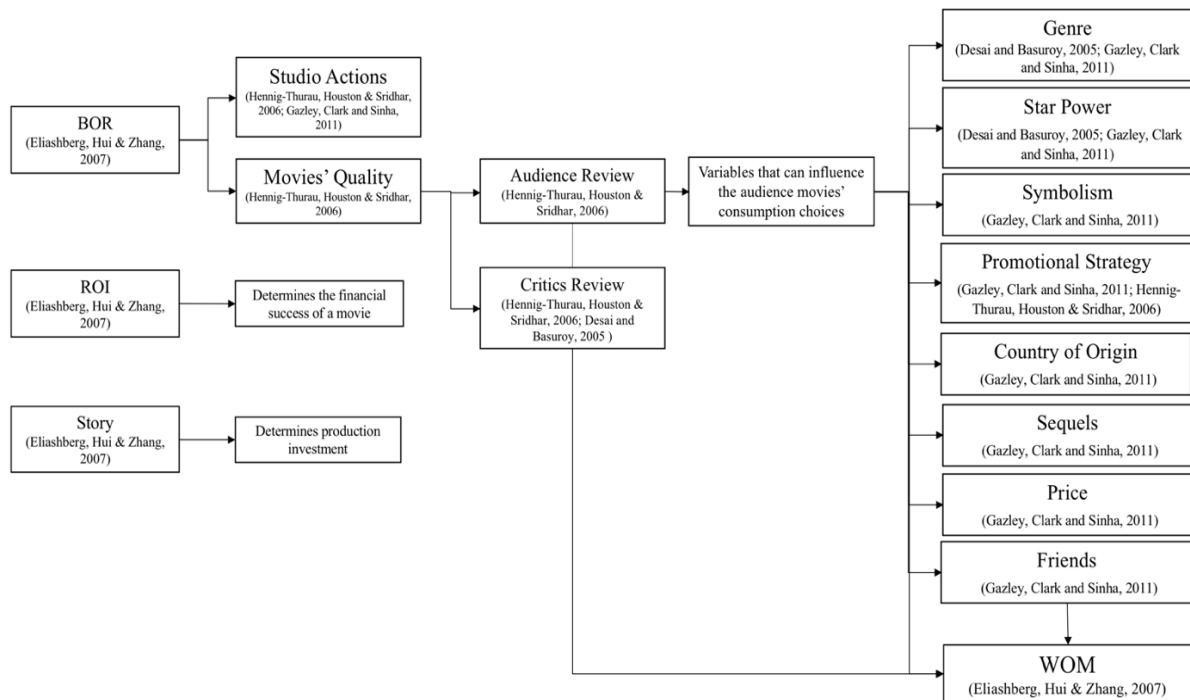

Figure 2.1 Influencers of movies' performance in the market

(Source: own elaboration)

Nonetheless, despite the variety of factors that have an impact on a film's performance in the market of the motion picture industry, Desai and Basuroy (2005, p. 218) contend that the familiarity that a consumer might have with different brands and elements (such as genre, stars, screenplay, direction, music, story and cinematography) also influences the expected quality of a new film "consumers can be fairly certain about properties of a new extension introduced by the parent brand just from being familiar with characteristics of the parent brand.". In fact, Peng, Cui and Li (2012) also argue that genre familiarity can be a crucial determinant of movies' ratings. As Verhellen, Dens and Pelsmacker (2015) explain, brand knowledge can be related as a node in human memory, which is an interconnection of nodes that activate and associate with each other in certain contexts. Consequently, the information that is activated in an individual's memory forms the initial judgments or attitudes toward that information, "It is argued that the attitudinal outcome of this process will be determined by the relative fit or congruence between the associative network of the brand and that of the movie" (Verhellen et al., 2015, p. 462).

2.1.2 The Meaning of Storytelling

We can trace back stories and the act of narrating from the prehistoric engravings and paintings to the new forms of storytelling that have been developed in the digital era. However, the way we organize and introduce stories has been in constant change throughout our history. For instance, during the Ancient Greek, Aristotle developed a unity of action structure that was reinterpreted during the Renaissance, "(…) more than a rule definition, it is a description of the state of the art related to myth and tragedy, stressing the unity of action (a continuous plot development, focused on the same protagonist) as a basic condition." (Palombini, 2017, p. 135). Nonetheless, modern storytelling doesn't seem to follow such linearity as the traditional Aristotelean position, in fact, according to Palombini (2017), "Non-linearity has even been considered one of the typical traits of storytelling in the digital era".

To better explain how the way we present stories has been shifting, Dawson and Sykes (2019) take it even further in their article regarding the *Concepts of Time and Temporality in the Storytelling and Sensemaking Literatures: A Review and Critique*, and explain that "In the relational interplay of temporal, contextual and sensemaking processes, there were several types of stories: finalized constructions of the past with plot lines and characters that serviced forms of

retrospective sensemaking; partial and fragmented stories in imagining future scenarios and possible outcomes in forms of prospective sensemaking; and stories that reconstituted the past and anticipated futures in making sense of an ongoing present (Dawson and McLean 2013)." (Dawson and Sykes, 2019, p. 107). Despite the several types of stories identified, it is rather important to understand how over the years, storytelling has been an art of form that played a primordial role on the way we understand and make sense of the world, "Today, scientific research has laid the foundations for a sound empirical understanding of storytelling as a clear aid to memory, as a means of making sense of the world, as a way to make and strengthen emotional connections, and as a way of recognizing and identifying with brands of any type." (Herskovitz and Crystal, 2010, p. 21).

Nonetheless, despite the changes in the way stories are presented and introduced over the years, there have always been stories that are more compelling than others. As Kent (2015) argues, storytelling is a rhetorical strategy with the power to move people, and not simply a way to disseminate information. Therefore, considering Kent (2015), there are several components to a good story that every storytelling strategy should consider:

1) The kind of story: deciding the kind of story is the first step and it should consider audience's expectations, "each plot or genre creates specific expectations in the minds of the audience, and the type of story told varies by situation and audience constrains" (Kent, 2015, p. 482).

2) Narrative theory: Narratives are part of our lived experiences. Humans are storytelling animals with power to influence other people's actions through narratives. (Burke, 1966 as cited in Kent, 2015). Further, as Kent (2015, p. 483) mentions, "Stories need to be rational, or make sense, and should be believable, or resonate with the audience's beliefs. Two other concepts make up what might be seen as the basis of storytelling: Identification (Burke, 1969), and Form (Burke, 1968).".

3) Identification: As Kent (2015) argues, the power of a story lies in its ability to resonate, "All stories that resonate draw upon heroes, villains, places, ideas, and other concepts that an audience identifies with." (Kent, 2015, p. 483). Therefore, if a story doesn't resonate, it falls short.

4) Form: The form we present a story has an effect on how we interpret it (Burke, 1968/1931 as cited in Kent, 2015). Kent (2015) further explains that it is the form that allows us to

make sense of music, novels, journalism, arts, television and the internet, because we recognize it, "This is the reason why story plots are so compelling. People recognize the forms from other contexts and are moved by them." (Kent, 2015, p. 484).

5) Understand the whole process: The reason why stories resonate with audiences is because they generate points of identification, have a narrative fidelity, and follow a story structure with a beginning, a middle, and an end (Kent, 2015). When developing a story is important to consider the characters, the plotlines, and the audience.

Regarding the marketing literature, the analysis of storytelling often seeks to explain the impact stories have as a persuasion tool for advertising and branding. Moreover, several studies show that brand narratives have a high persuasion influence on individuals, "McKee (2003) advocates that the best way to persuade someone (...) is by telling a compelling story." (Woodside, 2010, p. 534). It is precisely its persuasive ability that makes storytelling such a powerful tool. Although, not all stories are equally persuasive. As previously mentioned, in order for a story to persuade and influence behaviors, it has to engage with the individual and build an emotional connection. In fact, Lund, Cohen and Scarles (2018), also argue that stories not only communicate the brand's values, but also facilitate an emotional connection.

In the article *Brand-Consumer Storytelling Theory and Research: Introduction to a Psychology & Marketing Special Issue*, Woodside (2010) emphasizes how consumers engage with brands through storytelling, while considering the human psychological behaviors, such as self-discovering, need to belong and attribute meanings. Moreover, Woodside (2010) argues that a story is useful because it has touch points that create awareness and an emotional understanding and connection in the listeners or viewers' minds. Likewise, Gilliam and Flaherty (2015, p. 132), argue that "Human find stories compelling in a way that a simple presentation of the facts cannot match. Psychologists attribute a pervasive role to stories in our cognitive and social functioning". Therefore, due to its power, complexity and its impact on society as a whole, storytelling, has been a highly researched topic in different fields of studies. As Kent (2015) contends, organizations (for-profit or non-profit), and individuals would not be able to achieve a mythic status without having someone to tell their story. According to Escalas (2004), many researchers have already asserted that indeed people tend to naturally think in story-like form, and therefore, it is reasonable that this narrative process is also present when individuals interpret their experiences with brands.

2.1.2.1 Cinematic Storytelling

Considering Kerrigan (2018), the first forms of cinema were more concerned with the display itself due to the curiosity for the device. However, as filmmakers progressed, the attention turned to narrative engagement. There was a need to approach the making of films from the nature of storytelling, and through the narrative forms develop an interaction with the audience. Nalabandian and Ireland (2018) argue that narratives of films, novels and plays not only influence but also reflect human behavior. According to Kerrigan (2018), as the narrative potential in the motion picture industry developed, films started being established as ways to interpret and understand personal and societal issues, just as stories always have, "Combining Barthes' theorization of myth with Said's (1994) view of the arts as either challenging or reinforcing the status quo, we can start to understand the centrality of the movies as places we go to in order to understand society, history and culture and to, as Holt noted, resolve tensions in our lives." (Kerrigan, 2018, p. 504). Kerrigan (2018) further adds that movies are an iconic marketplace, and they are established as such due to their importance in selling products and selling ideology. In other words, movies are important because of their ability to carry myths despite the technology used, and by doing so films establish and challenge the market ideology. Contemporary figures of the film industry, such as Tarantino, Scorsese and Scott have mentioned the possible death of cinema, due to the growth of movie consumption at home and movie viewing. However, the demand for films continues to grow, "As technology advances, the way that the movies enter our lives, our homes, and our conscious and unconscious mind may evolve, but the central importance of the movies as carriers of myth remains." (Kerrigan, 2018, p. 508).

Considering the high investment risk involved when producing a film, the story script is decisive, "The green-lighting process – deciding which scripts from a large number of screenplays to turn into a movie – is one of the most important financial decisions movie studios and independent firms have to make almost every day." (Eliashberg, Hui, & Zhang, 2007, p. 891). However, despite its importance, it is also a highly subjective, unpredictable and problematic process, especially when disagreements between readers occur. Whether a script might or not turn into a movie is usually based on a process that relies on intuitions and judgments. In fact, the script to *Star Wars*, an international success, was first rejected by several studios before being accepted by Twentieth Century and Paramount, respectively (Eliashberg, Hui and Zhang, 2007). In order to

address the subjectivity of this process, Eliashberg, Hui and Zhang (2007) developed a more objective and rigorous approach that considers screenwriting domain knowledge and statistical learning methods to relate the scripts to potential consumers' responses. The development of a less subjective process allows production decisions to better analyze and choose between scripts that are potential film successes from economical failures, "rather than coming out with a set of rigid rules to follow, our approach will only suggest the structural regularities that a successful script generally possesses. (…) In a sense, our approach is similar to Goldenberg et al. (1999), who identified a set of templates for successful advertising. Goldenberg et al. (1999) showed that people's creativity generally improves after learning about the 'creativity templates.'" (Eliashberg, Hui and Zhang, 2007, p. 892).

In fact, according to Eliashberg, Elberse and Leenders (2006), marketing research in the motion picture industry has contributed to the development of early-stage box office performance by forecasting models and improving decision-support tools. The increase of marketing research in the industry by several authors allowed for a more detailed approach on the green-lighting process and on the product development, considering that through practices in the advertising industry and the application of quantitative and qualitative methods studios were able to improve the product, in this case, the film, success rate. However, Eliashberg, Elberse and Leenders (2006) also contend that despite the progress, the green-lighting process cannot be guided exclusively by economic analysis.

2.2 The Rise of Virtual Reality in Marketing

According to Loureiro, Guerreiro, Eloy, Langaro, and Panchapakesan (2019, p. 514), there has been research on the different applications of virtual reality (VR) since the 1990s, which has explored the several capabilities of this technological innovation in the field of tourism, retailing, education and medical issues. Moreover, research has also started to investigate and point out the application of virtual reality in business and marketing, "Several studies show that the product/brand stimuli can come from consumers' experiences in virtual reality (e.g. Bigné, Llinares & Torrecilla et al., 2016; Verhagen, Vonkeman, Feldberg, & Verhagen 2014; Yeh et al., 2017) with concepts such as attachment, engagement and identity being induced by virtual objects. (e.g.,

Grewal, Roggeveen, & Nordfalt, 2017; Koles & Nagy, 2012; Nagy & Koles, 2014), as well as purchase behaviours (Krasonikolakis et al., 2014)." (Loureiro, et al., 2019, p. 514).

In the article *The future of marketing*, Rust (2019) identifies the three main forces that are influencing and changing the field of marketing, "These are 1) technological trends, 2) socioeconomic trends, and 3) geopolitical trends." (Rust, 2019, p. 1). Regarding the topic of this dissertation, the first identified force, the technological trends, will be considered. According to Rust (2019), the 21st century is highly characterized by technological developments, the advent of the Internet and, consequently, the amount of information available, which led to increased importance of word-of-mouth (WOM). Therefore, Rust (2019) argues that this force includes: the expansion of relationships and service; artificial intelligence (AI); Big Data; and networks. Considering the estimated rise of service that Rust (2019) mentions, the application of technology in marketing is highly connected with the expansion and improvement of the services, that will result in deeper and stronger relationships between brands and customers, "Advancements in technology have expanded businesses' ability to communicate with customers, store customer information, and analyze customer information. Because relationships are typically centered in the service economy, deeper customer relationships create opportunities to expands service, more than the opportunities to expand the goods economy." (Rust, 2019, p. 3).

In addition to VR, other technologies like Augmented Reality (AR) and Spatial Augmented Reality (SAR), have also been introduced over the years in the marketing field as a new technological tool. Indeed, technological developments are already shaping the marketing communications, and the way companies deliver content and implement innovative approaches, which can ease the flow of information between market entities. As Grudzewski, Awdziej, Mazurek, and Piotrowska (2018) argue, the new advanced and technological methods, are more efficient than traditional paper advertising. Regarding Virtual Reality technology, Grudzewski et al. (2018) also state that the use of VR and video have a more positive impact on marketing messages' perceptions, having, therefore, a better reception. Consequently, advanced methods can lead to successful marketing strategies and sales.

Virtual Reality is often described as a technology that is able to provide consumers a multi-sensory immersive experience. There are several definitions of Virtual Reality (VR), a more technical one by Earnshaw (2014) is that "Virtual Reality is a multi-sensory experience defined as real-time inducing graphics with multi-dimensional framework, complemented by a display

technology that provides the end user with model integration" (Earnshaw, 2014 as cited in Farah, Ramadan, & Harb, 2019, p. 136). Further, considering Sherman's (2003) definition, "Virtual Reality is a medium composed of interactive computer simulations that sense the participant's position and actions and replace or augment the feedback to one or more senses, offering the participant a feeling of being mentally immersed or present in the simulation (a virtual world)." (Sherman, 2003 as cited in Grudzewski et al., 2018, p. 38). Both definitions illustrate the importance of how technology addresses the user's senses. In fact, as Biocca and Delaney (1995) explain, virtual reality serves the users' eyes, ears, hands, and other sensorimotor channels, which contributes to determining the quality, value, and the utility of what users are experiencing through technology. Further, Biocca and Delaney (1995) add that each physical component is judged according to quality regarding how it matches the users' sensors channels, and consequently affect human perceptions and cognitive levels. Therefore, considering Biocca and Delaney (1995), the way a VR experience is designed is unavoidably an exploration of how we as humans use our five senses and, consequently, how we think.

As Cowan and Ketron (2019, p. 483) attend, the growing attention of VR in the marketing and management field is highly associated with the fact that this technology "allows consumers to view a different, virtual dimension, providing substantial potential for both selling products and create consumer-brand relationships. (…) It incorporates enhanced sensory elements and, in high-involvement situations, elicits telepresence, the feeling of being present in another world (Berg & Vance, 2016).". Cowan and Ketron (2019) further argue that VR allows for a user control that 2D technologies can't provide, and that nowadays firms are more regularly using VR technologies in their marketing strategies in order to engage with customers. Virtual Reality is an extremely powerful technological tool due to its fully immersive characteristic and ability to provide fully realistic experiences, "Unlike a traditional computer, mobile phone, smart spectacles, or a TV set in which users can look to the left and to the right and realize that they are still in the actual world (e.g. in their living rooms), virtual reality surrounds users as if they were looking or moving in a reality that is different from their actual reality. One can remain in the living room and virtually experience what it's like to go skydiving, visit famous places, or fly through the Arctic." (Farshid, Jeannette, Eriksson, & Keitzmann, 2018, p. 660).

Despite the growing importance of AR and SAR technology, it is of interest for the present dissertation to explore how an immersive simulated reality provided by virtual reality technology

is able to provide users with immersive experiences through the use of HMD (head-mounted display) devices.

2.2.1 Virtual Reality: A Marketing Experience

According to Lemon and Verhoef (2016), marketing literature on customer management, has been highly focused on how customers can create value for firms, especially by using customer lifetime value (CLV) as the main metric. However, nowadays the touch points are not as linear, and consequently, the customer journeys, are also more complex. According to Lemon & Verhoef (2016, p. 69), there are three main reasons that led to such complexity:

1) "Firms are confronted with accelerating media and channel fragmentation, and omnichannel management has become the new norm";

2) "customer-to-customer interactions through social media are creating significant challenges and opportunities for firms";

3) "Firms also have much less control, overall, of the customer experience and the customer journey, resulting in behaviors such as showrooming.".

As a result of the three identified reasons, it is harder and more complex for companies to control the customer journey and the experiences each customer has with a company. As Bowden, Gabbott, and Naumann (2015, p. 775) argue, "Current relational theory conceptualizes relationships as being highly experiential, interactive and inherently co-creative (Brodie, Hollebeek, Juric, & Ilic, 2011; Brodie, Ilic, Juric, & Hollebeck, 2011; Hollebeek, 2011a, 2011b, 2012; Ramaswamy, 2011; Sashi, 2012; Vargo, 2009; Vargo & Lusch, 2004, 2008).".

Experience is defined as an happening that "involves a personal occurrence with emotional significance created by an interaction with product or brand related stimuli" (Shieh & Lai, 2017, p. 59). Moreover, brand experience describes the experience that a customer has with a certain brand, "Brand experience refers to consumers' purchase and consumption experiences with the brand and the organization, as well as to the brand influence on non-consumers" (Khan & Rahman, 2015 as cited in Prentice, Wang & Loureiro, 2019, p. 51). Additionally, according to Japutra and Molinillo (2019), brand experience is conceptualized as the sensory, cognitive, social, affective and behavioral responses to brand stimuli created by marketing activities. In fact, considering Braktus, Schmitt, and Zarantonello (2009, p. 65), the concept of brand experience includes possible

responses that may vary in its four dimensions, "we conceptualized brand experience as subjective consumer responses that are evoked by specific brand related experiential attributes in such settings. We demonstrated that brand experience can be broken down into four dimensions (sensory, affective, intellectual, and behavioral), which are differently evoked by various brands". Furthermore, Braktus, Schmitt, and Zarantonello (2009) also suggest that brand experience can affect consumer satisfaction and loyalty, both directly and indirectly, through brand personality.

According to Gupta, Pansari and Kumar (2018, p. 13), "experiences affect customers' level of satisfaction and emotions toward a brand, which further influence direct (purchases) and indirect (referrals, influence, and feedback) CE.". In fact, customer experience and customer satisfaction are two very connected concepts, "Customer experience is holistic in nature, involving customers' cognitive, emotional, affective, social, and physical responses to the entity, product or service" (Schmitt, 1999 as cited in Gupta, Pansari and Kumar, 2018, p. 15). As Braktus, Schmitt, and Zarantonello (2009) argue, brand experiences are subjective and can vary in intensity and strength, and also in valence, meaning they can be positive or negative. Further, some brand experiences can last longer in our memories than others. Long-lasting brand experience can be store in consumers' memory, which can affect satisfaction and loyalty toward the brand.

In order to create a satisfying consumer experience, it's first important to consider that "Any consumer experience has its origin in two types of relationship: the buyer-product relationship (Mathwick, 2001) and the buyer-seller relationship (Bagozzi and Verbeke, 2014)." (Alcañiz, Bigné, & Guixeres, 2019, p. 3). Hereupon, e-commerce has a lot of advantages and disadvantages. Regarding the advantages, "Interactivity has been identified as a critical advantage of any e-retail system (Merilles, 2002); it helps the buyer participate, act and learn, and improves feedback from the buyer to the retailer to help him/her produce a very pleasant and enjoyable shopping experience, and develop a close buyer-retailer relationship, thus facilitating good two-way communication." (Alcañiz, Bigné, & Guixeres, 2019, p. 3).

As Alcañiz, Bigné and Guixeres (2019) explain, traditional marketing frameworks include direct and indirect experiences. While direct experiences are the ones that imply a physical interaction between the consumer and subjects (e.g. sellers) and objects (e.g. products); on the other hand, an indirect experience considers the different aspects that also contribute to the experience, such as advertising, stores, media communication, devices and digital media. Further, Alcañiz, Bigné and Guixeres (2019) also describe the growing importance of e-commerce considering the

applications of digital marketing, and how one of the main goals an e-retailer faces are to create and provide a positive shopping experience using computer-mediated communication, and especially, the Internet.

Moreover, to provide experiences that enhance customer satisfaction and the customer experience, firms are progressively implementing and investing more in technology-based services, which will consequently benefit the way consumers connect and interact with brands, "It is this level of connectivity between consumers and organizations within Virtual Worlds that offers brands heightened opportunities to experientially engage their customers through communication, collaboration and cooperation (Fetscherin, et al., 2008). This enhanced connectivity in Virtual Worlds fundamentally changes the way organizations can create and sustain brand value for their customers" (Barnes, Mattson & Hartley, 2015, p. 12).

However, it's also crucial to mention one of the greatest challenges in e-commerce, which is the lack of multisensory interactions, "e-retail sites have not been able to reproduce the enjoyable and emotionally important shopping experiences that they enjoy in physical stores. Consumers say that, with e-retail, they do not have as rich an experience as they do in physical stores, which includes multisensory interactions with the product, the store, and salespersons" (Lee & Tan, 2003; Bonetti et al., 2018 as cited in Alcañiz, Bigné, & Guixeres, 2019, p. 3). Under such challenge, the technological developments in the past years have been exploring the capabilities of virtual experiences, "A virtual experience is a simulation of a real or physical experience, which occurs within a computer-mediated environment, and has been constructed to be located between direct (i.e., product trial) and indirect (i.e., traditional advertising) experience along the spectrum of consumer learning." (Daugherty et al., 2018 as cited in Alcañiz, Bigné, & Guixeres, 2019, p. 4).

2.2.2 Increased Popularity of Virtual Reality

The popularity of Virtual Reality (VR) has been increasing over the years. In fact, as Grudzewski et al. (2018) mentions, "The number of VR users may increase rapidly with possibly up to 171 million active users in 2018 (…) It is expected that this trend will spread faster than was the case with the Internet and smartphones, especially since in order to consume basic VR content consumers do not need to invest in very expensive hardware" (Grudzewski et al., 2018, p. 37). Further, several studies (Grudzewski et al., 2018; Lee, Kim, & Choi, 2019) suggest, that the technology has developed to a point that it's becoming progressively similar to reality, and also,

less expensive. Both these factors contributed highly to the increased popularity and investment in VR technology, "The most prominent selling point of VR devices is their ability to make users feel like they are actually in a simulated world" (Freina & Ott, 2015, as cited in Lee, Kim, & Choi, 2019, p. 37). Moreover, as Leung, Lyu and Bai (2019) explain, the emergence of VR as a marketing tool is especially important considering experience marketing, because this technology can make commercials' imagery more realistic and vivid. In fact, according to Mooradian, Matzler and Szykman (2008, p. 83) perceived ad vividness can be defined as "imagery provoking and emotionally engaging", and is considered a highly important attribute of advertising, since it should be related to empathetic responses.

Several recent studies have discussed the impact of virtual reality as a marketing tool that provides a positive experience. According to the existent literature (Mooradian, Matzler & Szykman, 2008; Barnes, Mattson & Hartley, 2015; Grudzewski, et al., 2018; Farah, Ramadan, & Harb, 2019; Lin, 2017; Cowan and Ketron, 2019; Loureiro, et al., 2019; Alcañiz, Bigné, & Guixeres, 2019), VR has a high potential when it comes to its application in marketing, some of the benefits may include positive outcomes regarding consumer behavior, sustainable competitive advantage, engagement, brand attitudes and brand experience.

Nonetheless, despite the identified benefits, a lot of the literature regarding the application of VR in marketing remains mostly explored under the context of tourism or gaming industries, not considering, therefore, the full marketing impact of VR experiences in different industries. Furthermore, literature (Laurell, Christian, Adam, & Larsson, 2019; Deng, Unnava, & Lee, 2019; Shin, 2018) also mentions that the full effective use of this remains unclear and imprecise. Therefore, there are a lot of expectations regarding the VR applications as a tool with the ability to connect and engage with customers, but it is also still considered a new technology and its advertising effectiveness requires more research, "VR, as a new form of interactive media, just started its application in advertising and research examining the effectiveness of immersive VR commercials is generally lacking" (Van Kerrebroeck et al., 2017 as cited in Leung, Lyu, & Bai, 2019, p. 2). In fact, notwithstanding the many benefits regarding this technology application in marketing and management (Grudzewski, et al., 2018; Hudson, Matson-Barkat, Pallamin, & Jegou, 2019 Farah, Ramadan, & Harb, 2019; Lin, 2017; Tussyadiah, Dan, Jung, & Tom Dieck, 2018; Alcañiz, Bigné, & Guixeres, 2019); on the other hand, Laurell, et al. (2019), Deng, Unnava, and Lee (2019), and Shin (2018) also emphasize that there is still little research on how to use VR in

an effective way to engage with customers and it is, therefore, crucial to understand its different challenges, "Though more brands are using VR technologies to connect with consumers (Clark, 2017), little is understood about how they should use VR to engage consumers" (Cowan and Ketron, 2019, p. 483).

Despite the limited existent literature on how to use VR to connect with customers, existing literature also emphasizes the importance of valuable content when developing a marketing VR strategy. As Farah, Ramadan, and Harb (2019, p. 141) suggest, "As the VR experience is closely related to the immersive content provided to its users, content creation becomes a crucial component of this overall experience.". Additionally, Shin and Biocca (2017, p. 2817), also underline the need to, despite the technology, focus on the story, "Regardless of how innovative and advanced the technology, the key is to focus on the story, not the technology itself or any special 3D effects.".

Like many industries, the motion picture industry was not oblivious to the possibilities of virtual reality and started exploring cinematic virtual reality. Cinematic VR can make users experience the movies' events and feel as though they are part of the story. Studios were attracted by the immersive experience this technology is able to provide, and how users can be immersed in synesthetic world experience in 360 degrees (Mateer, 2017). According to Ding, Zhou and Fung (2018), nowadays major movie companies are too increasingly investing in new technologies and producing VR games and trailers based on movies (e.g. *Coco*, *The Jungle Book*, and *Star Wars*). In 2015, The Walt Disney Company made a 66 million dollars investment in a VR startup called Jaunt VR. Moreover, in 2017, a new division called FoxNext was created by 20th Century Fox to focus on location-based entertainment, augmented reality and virtual reality. Even movie festivals such as Sundance Film Festival and Cannes Film Festival started handing out awards for VR movie projects in recent years. Even though Cinematic VR is still a new type of movie, the integration of movie techniques with VR techniques may become a crucial breakthrough for traditional screen movies (Ding, Zhou & Fung, 2018).

2.3 Empathy and Sympathy in Movies

Considering Escalas and Stern (2003), it is important to distinguish empathy and sympathy to understand how these concepts can relate. As Escalas and Stern (2003) argue, these concepts –

sympathy and empathy – are interconnected parts of a system, therefore, these are different types of responses, but they are not exclusive, they relate. Empathy is considered an emotional response that results from another's emotional condition or state, meaning that an empathy response occurs when a person is absorbed in another person's feelings. Sympathy, however, is when a person, without being absorbed in another person's feelings, is aware of another's feelings. As Escalas and Stern (2003, p. 567) explain, "whereas sympathy stems from the perspective of an observer who is conscious of another's feeling, empathy stems from that of a participant who vicariously merges with another's feelings.". Further, as Escalas and Stern (2003) contend in the article *Sympathy and Empathy: Emotional Responses to Advertising Dramas*, even though sympathy and empathy are both feelings responses to a stimulus, it is, however, necessary to categorize those responses as different types. In fact, considering the motion picture industry, empathy is often considered the vital feeling response a spectator can achieve, "In later aesthetic film criticism (Aumont et al. 1983, 1992; Metz 1974), the empathic response is described as the ultimate experience in which the spectator shares the emotions of the character and thus becomes the central figure in the performance." (as cited in Escalas and Stern, 2003, p. 569). Existent research in the general advertising and emotional literature also supports that sympathy can lead to positive consumers ad attitudes, however, empathy responses have the ability to influence even more consumers' attitudes toward advertising. (Stout et al., 1990, 1986 as cited in Escalas and Stern, 2003).

According to Rooij (2019), and regarding the motion picture industry, sympathy requires some sort of supportive emotion for a character and comprehension for the events in the narrative. However, sympathy is a more distanced feeling than empathy. Empathy results in stronger emotional reactions being, therefore, key when studying the emotional relationship between the audience and the fictional characters. Furthermore, Rooij (2019) contends that characters play a crucial role, being instruments through which the narrative communicates its morals, ideology, or standpoint. However, as Rooij (2019) additionally explains, discourses of realism have been explored by theorists and philosophers such as André Bazin (1967), Stanley Cavell (1979), and Charles Peirce's (1974), when considering the empathetic potential characters may have in contemporary computer-animated movies due to its visual realism, "It seems, therefore, that the biggest paradox of computer-animated film lies in its representation of a 'reality' through layers of (animated) constructedness." (Rooij, 2019, p. 194). This paradox has been highly discussed in synesthetic literature, according to Sheldon (2019) digital imagery evokes questions of ontology

and indexicality in movies. Pondering over this paradox that computer-animated characters present, and considering movies by the three major American animation studios (Pixar, Disney and DreamWorks), Rooij (2019) argues that by using virtual cameras, digital sets, and perceptual cues that create a three-dimensional world that is believable, these studios manage to develop characters that "seem to be accepted by audiences as real and authentic, evoking empathy and amplifying meaning". Similarly, Sheldon (2019) explores how Gollum, an animated character part of *The Lord of The Rings* movies can provide an empathetic cinema experience. According to Sheldon (2019, p. 217), "In our direct experiences of the film in all its multisensory facets, our bodies are often bound up with the narrative such that our bodily experience is not yet differentiated into the neat categories of reality and illusion.". Even though Gollum is not a human character, the spectator also feels the body cry out when, for instance, Gollum crashes into razor-sharp rocks. Considering Sheldon's (2019) article, spectators don't necessarily require hyper-realism elements to have a 'directed empathy' for a digital character. In fact, a digital character may even enhance the spectator's sensory engagement with the movie, and either in a conscious or unconscious way, digital characters are assessed according to their interactions with different facets of reality, which call upon the spectators' multisensory experiences with reality, allowing spectators to validate their experience with the movie's narrative and respective characters. The emotional connection and 'directed empathy' a spectator might achieve while experiencing a movie is "As many others have noted, this is one significant aspect of the cinema's incredible magic: its ability to carry us away to fantastic realms and cause us to engage and feel something with the most unlikely and, perhaps, unimaginable of creatures." (Sheldon, 2019, p. 219).

2.3.1 Narrative transportation

Narratives can have an immersive impact, "Information processed in a narrative manner is more easily assimilated and accepted by a consumer (Bruner, 1986; Schank & Aberlson, 1995). The narrative mode of thought can lead to absorption, a state characterized by focused immersion, involvement, and dissociation from the surrounding environment" (Söderlund & Sagfossen, 2015 as cited in Solja, Liljander, & Söderlund, 2018, p. 296). Furthermore, research shows that stories can facilitate persuasion, because it is harder for customers to distinguish the real from hypothetical. In other words, the viewer relates to the story, especially when personal beliefs are identified, and is transported to a fictitious world. (McFerran, Dahl, Gorn, & Honea, 2010).

Storytelling can result in narrative transportation, a concept first identified by Green and Brock (2000, p. 702), according to whom, "Transportation is 'a convergent process, where all mental systems and capacities become focused on events occurring in the narrative.".". Complementary, narrative is defined as "the consumption of a story through which a consumer does not just read the story but also makes it readable in the first place." (Kim, Lloyd, & Cervellon, 2016, p. 305). According to Green and Brock (2000, p.701), consumers have the ability to create a memorable experience from ads and other forms of communication, such as movies, and that narrative transportation can occur when the consumer "is absorbed into the narrative, becomes part of the story and lives the story from the inside". However, it is also important to highlight that not all stories can result in narrative transportation by the consumers. The extent of narrative transportation depends on imagery, cognitive absorption and also immersed emotions that are evoked by the events in a story (Ryu, Lehto, Gordon, & Fu, 2019).

Indeed, considering Green and Brock (2000), when individuals are absorbed or transported into a narrative world, which is a mental process, it is possible that those individuals show effects of the story on their real-world beliefs. This mental process of transportation is considered an immersion into a narrative and, therefore, with the ability to be related to attitude change and belief; unlike cognitive elaboration, which Green and Brock (2000) consider more an evaluation of arguments and highly based on logical consideration, and hence it should be a distinguished construct from transportation. In fact, "Elaboration leads to attitude change via logical consideration and evaluation of arguments, whereas transportation may lead to persuasion through other mechanisms." (Green and Brock, 2000, p. 702), and those mechanisms may include the reduction of negative cognitive responding, the decrease of the likelihood for individuals to counterargue story claims or disbelieve them, and additionally, transportation through a narrative experience may feel more like a real experience.

Regarding the article *The Role of Transportation in the Persuasiveness of Public Narratives*, Green and Brock (2000, p. 703) argue that "(…) the components of transportation include emotional reactions, mental imagery, and loss of access to real-world information; the resulting transportation may be a mechanism for narrative-based belief change.", and design a scale which allows to measure the extent of each individual transportation when exposed to a narrative. The developed scale captures the experience of being transported and provides evidence that transportation is a mechanism with the power to influence beliefs. Whereas the traditional thought

was rather focused on the cognitive responses, Green and Brock (2000) extend the importance of transportation to a narrative experience that consequently has an impact on individuals' beliefs, and therefore, on emotional expressiveness, attention, and on production of imagery.

2.3.2 Virtual Reality: A Technology that enhances Empathy

According to Anaza, Kemp, Briggs, and Borders (2019), stories can vary in forms, genres, and mediums (movies, TV, advertisements, video games, oratory and so forth), however, Anaza, et al. (2019, p. 2) also underline that "Notwithstanding the medium, the goal of any narrative is to attempt to transport the audience by making them think about the experiences and events in the narrative, obtain perceptions, appraise emotions, and draw conclusions about the story". Different mediums can enhance transportation differently. Considering the article *Exploring immersive experience in journalism*, Shin and Biocca (2017) confirm that, VR viewing and interaction can improve user's engagement, and further explain that "these perceptions were positively associated with the viewers' experiences of empathy and embodiment, and with future intention." (Shin & Biocca, 2017, p. 2815), meaning that the story experience provided by the virtual reality technology may also be connected to the self and, therefore, enhance transportation. Further, despite the medium "Escalas (2004a) showed that ads that facilitate transportation improve persuasion via connecting the ad to the self, which is important in 'breaking through the clutter' and creating personal connections to products" (McFerran, et al., 2010, p. 314). Additionally, Green and Brock (2000, p. 719) argue, that a positive evaluation of the main characters is indeed systematically related with greater transportation, and that when an individual likes a character, influencing an attitude or belief is more effective, "Transported individuals may have a greater affinity for story characters and thus may be more likely to be swayed by feelings or beliefs expressed by those characters.".

According to Shin (2018), virtual reality is becoming more often used in storytelling and this technology is considered an effective technological format as it allows for interaction, since the user can take part in a virtually recreated scenario, "Stories are produced as computer graphic virtual environments, which can be inserted into online virtual worlds and watched either conventionally on a monitor, or via fully immersive systems such as head-track display." (Shin, 2018, p. 64). The combination of VR and storytelling can result in improved user experiences (UXs), "because higher levels of immersion or presence will enable users to experience the feeling of being in another location while watching content and using services" (McMahan, Lai, & Pal,

2016 as cited in Shin, 2018, p. 64). The term immersion can be ambiguous, however, Shin and Biocca (2017, p. 2815) explain the importance of understanding immersion as a user-dependent concept, rather than mainly influenced by technology only, "immersion is a relational concept that relates to other UX factors such as empathy and embodied cognition. (…) Immersion and other factors are co-related, co-evolving, and interactional. (…) Immersion and empathy (and further embodied cognition) are two sides of the same coin and are closely related. At the core of VR immersion is the empathy factor.". Moreover, Shin and Biocca (2017) argue that empathy is the user experience factor that resides between stories and users. Therefore, Shin and Biocca (2017) suggest a virtual cycle of immersion, according to which both immersion and users co-evolve and interact, in the sense that "immersion influences users and, simultaneously, immersion is shaped by users." (Shin & Biocca, 2017, p. 2815).

Considering the article *Empathy and embodied experience in virtual environment: To what extent can virtual reality stimulate empathy and embodied experience?*, Shin (2018) proposes to understand what is it like to experience a story in VR, by focusing on three main research questions: (1) How does immersion relate to human traits of empathic behaviors in VR stories? (2) How do the human tendencies of immersion and empathy perceive presence and flow differently? (3) How do users perceive immersion and how does immersion influence empathy in VR stories? This study shows that even though VR developers propose an immersive experience, it is, however, the users' cognition and sense making processes that based on the users' own needs, preferences and understanding of the story will actively create their own Virtual Reality experience. Meaning that it is not only the virtual reality technological device's immersive ability that leads to users' engagement, but also the users' own intentions and decisions that can result in greater empathy and embodiment.

According to Shin (2018), VR can indeed affect the perceived presence and make them feel flow, but whether the users feel empathy or embodiment is related to the users' own traits. As Mooradian, Matzler and Szykman (2008) contend, empathetic responses in advertising not only allow participants/viewers to understand the advertising experiment, but more importantly, it allows them to actually experience the feelings themselves. Embodiment and the empathy levels determine the quality of the experience and can lead to engagement, but the presence and the flow of the experience itself may not be more than an initial reaction, which can or not be developed to an emotional level, "The first reaction of most viewers to VR storytelling is a sense of presence:

'it feels like being there'. This emotional reaction to VR triggers responses that go deeper than the initial reaction, which mainly involves superficial presence. The subsequent reaction involves human emotional states: developing feelings such as empathy, compassion, and embodiment." (Shin, 2018, p. 70). In fact, as research suggests feelings and emotions have a high impact on attitudes and judgments about advertisings (Kemp, Bui & Chapa, 2012). According to Kemp, Bui and Chapa (2012), advertising has the ability to provoke consumers' emotional responses. Kemp, Bui and Chapa (2012), further explain that positive emotional responses from advertising are significantly related to consequently favorable attitudes and behavioral intentions.

Considering Shin (2018), there are two different processes that must be distinguished within the users' sensemaking. Shin (2018) explains that the virtual reality experience and its ability to increase the users' level of empathy cannot be unattached of the users' own cognitive acts, "Within the users' sensemaking, two processes of different natures can be identified: the immersion quality is established explicitly and implicitly by users, and then the empathy starts to kick in. A user's experience of the process is simply the application of an intrinsic value to an external reality, as it has been reconstructed on the basis of cognition. Accordingly, the process is composed of cognitive and volitional acts that rely on each other. It is the user's cognition of reality that starts off the process. His or her level of empathy will determine the natures of the procedure, as well as the sense-making that results from it." (Shin, 2018, p. 70).

Considering the narrative structure applied in the virtual reality context, in a study conducted by Feng, Xie and Lou (2019), standard video ads with 360-degree virtual reality ads were compared regarding the constructs of presence, perceived ad novelty, ad attitudes and brand attitudes. This study also considered the different levels (low, moderate and high) of narrative structure to which participants were exposed through the two different technological formats (2D and VR). According to Feng, Xie and Lou (2019), the 360-degree ad exceeds standard videos the most when the degree of narrative structure is moderate. However, the mentioned constructs don't vary much between the two mediums when the narrative structure is either low or high. These results challenge previous research regarding the positive relationship between the degree of narrative structure and the persuasion effectiveness, "In the context of 360-degree video advertising, ads telling well-developed stories may not necessarily become persuasive. This is because narrative structure becomes fluid in the 360-degree video due to users' control of point of view, and the assembly of different content pieces may further engender cognitive overload and

increase the difficulty in comprehending the plot." (Feng, Xie and Lou, 2019, p. 150). Despite the increased research in the recent years on virtual reality and storytelling, this study by Feng, Xie and Lou (2019), was the first one to consider narrative structure on 360-degree video advertising, and it understands the challenges storytelling concepts may face regarding its content application on more immersed technological devices, such as virtual reality.

As previously mentioned, virtual reality is a technological device with the ability to provide positive brand experiences, due to its capacity to transport users to a virtual dimension in which they are immersed in a realistic environment. However, the technological features of this device considering its narrative advertising applications remain highly unexplored. In the article, *The Key to 360-Degree Video Advertising*, Feng, Xie and Lou (2019, p. 149), argue that "narrative structure becomes fluid in a 360-degree video (as opposed to fixed narrative structure in a standard video) because users can manipulate the point of view and control how they approach the ad story.", which highlights the opportunities in interactive storytelling and transportation. Further, considering communication research, and more precisely, Green and Brock (2000) and Escalas and Stern (2003), an empathetic reader/viewer may experience transportation, which in turn, may result in more effective persuasion, higher realism of the experience, reduced cognitive responses and stronger affective responding. However, those same opportunities also imply the new challenges to this new storytelling format may encounter in the way it presents narratives. It remains to be understood how the experience of watching a movie through virtual reality can enhance empathetic responses.

2.3.3 Cinematic Virtual Reality

As Eliashberg, Elberse and Leenders (2006, p. 659) contend, since the beginning of cinema technology has always played a major role in the industry, "Motion pictures come in many formats and industry boundaries are increasingly difficult to draw as more industries (such as finance, cable, telecom (in particular mobile), fast food, consumer electronics, and information technology) assume a role in the development, distribution, and exhibition of motion pictures.". Regarding the complexity and continuous development that characterizes the motion picture industry, Eliashberg, Elberse and Leenders (2006) further argue the need to establish new metrics of success, and also develop and broaden the knowledge of new marketing strategies, always considering consumer behavior as an important pillar in research.

Considering the article "*Virtual Reality's New Synesthetic Possibilities*", Miriam Ross (2020) contends that utopian predictions about the adoption of virtual reality technology will be able to lead to new social, educational and cultural user engagements and heightened empathy. However, Ross (2020) also emphasizes research on the pessimistic consequences of this technology, including "concern with the loss of the human self (Batchen 1998), a fear of new panopticon regimes of surveillance (Hillis 1999), and the negative impact of "the serious contradiction between corporeal reality and artificial image illusion" (Grau 2003, 203)." (Ross, 2020, p. 298). As previously mentioned, aesthetic film critics argue that empathy responding is often considered the ultimate experience for movie spectators (Aumont et al. 1983, 1992; Metz 1974 as cited in Escalas and Stern, 2003). However, Ross (2020) argues that considering the present moment in the history of virtual reality, total bodily engagement and the actual transference into the technological device is not yet possible. According to Ross (2020, p. 299), despite the increased popularity of virtual reality over the years, the technology is still at a nascent moment, "The attraction of VR, its novel hook, is the ability for its optical illusion to convince us that we have entered an entirely new embodied world. Yet for all that Bazin's (2009) dream of a Total Cinema is anticipated, we are still, at a technological level, at the very least, far from the state envisioned by popular media and far from leaving the knowledge of illusion (Gunning 1995) and/or double placement in which our body feels located in two places at once (Barker 2009).". Therefore, rather than just the technology itself, VR also explores and uses synesthetic modes to engage with different users' senses. This means that, while the technology is able to provide direct sensory stimuli by using head-mounted-displays (HMDs), which shutters VR users from the outside world, it is, however, the content that the technology delivers that also contributes to determine users' feelings in the virtual world. The importance of the content that is delivered in addition to the technology itself plays a crucial role in the overall experience. As Farah, Ramadan and Harb (2019) argue, content creation is an important part of virtual reality and the focus should remain on the story.

Considering Ross (2020), there are processes in cinema that use audio and visual data to reach the spectators' sensory knowledge, even if in a metaphorical way, in order to stimulate touch, taste and smell, so that the viewer can have a more direct experience. Ross (2020) further argues that, despite the differences between VR and cinema, similar processes can take place in virtual reality. However, VR's ability to shut off the outside world may allow for synesthetic interactions to happen with even greater proximity. In fact, as Staubli (2017, p. 1) contends, "VR instantly

achieves what some great innovators in filmmaking have strived for, often in ingenious and surprising ways, since the dawn of cinema: to transport the viewer beyond the physical boundary of the two-dimensional screen to another place, for an embodied, sensory and participatory experience.". Moreover, the technology provides the spectator a central position in which the user is continuously in the sensorial experience. Contrarily, in cinema, there is a distance in optical visuality, which allows the spectator to retreat from the sensorial experience, "whereas the distance found in optical visuality encourages a type of mastery with the potential to retreat to a safe space provided by that separation, the inner, among-the-visual-field, of VR provides no such escape." (Ross, 2020, p. 302). This reason partly explains the number of recent works done in virtual reality that have explored the horror genre by exploiting the thrills the user might gain when he/she is aware of their inability to escape. According to Staubli (2017), the horror genre trademark is precisely the ability to provoke feelings of unsafety, not being able to escape and goosebumps in the spectator, and VR has the ability to amplify such reactions, which are the pleasure of horror, by its corporeality. In a similar way, considering the documentary genre, as Nash (2018) explains, while in cinema the spectator can witness the actions that are happening from a distance, in a VR experience, the user becomes the character as is allowed to actually feel the events.

Nowadays, HMDs often include compatible hand controllers which allow users to engage with the content. Indeed, another synesthetic transference that has become possible through the development of virtual reality technology is the ability to produce a tactile sensorium. Such ability takes VR beyond the possibilities of 3D cinema, and even VR works that don't necessarily use this function are still able to establish an experience in tactile ways (Ross, 2020). However, there are still some gaps in VR. The hands, through the hand controllers, are still the only indicator of the user's movement, meaning that the technology has not yet reached a point that it is able to provide a complete digital avatar that corresponds to the users' full movement. In order to overcome this gap, instead of a missing body VR works often choose to produce virtual bodies. Nonetheless, even a virtual body can disrupt the optical illusion (Ross, 2020). Despite the current limitations the technology still holds regarding the possibility to achieve total bodily engagement and the actual transference into the technological device, according to Ross (2020), some movies are able to provide spectators with experiences and pleasures that would not necessarily require any further technological augmentation, such as *Clouds over Sidra* (2015), *Collisions* (2016) and *The Protectors: Walk in the Rangers' Shoes* (2017). The Ross (2020, p. 310) further explains that the

reason for this is because cinematic techniques can and should be applied to VR in order to provide spectators with optical illusions that are not disturbed or affected by the technological limitations, "ongoing technological limitations mean the optical illusion is paramount in the creation of synesthetic interactions".

Mateer (2017) analyzed movie directors' techniques used to capture the audience's attention and guide the spectators, and further discussed that some of those techniques can indeed be applied to cinematic virtual reality. In his study, Mateer (2017), considered techniques such as: differences in grouping (e.g. *12 Angry Men*, 1957, by Henry Fonda); differences in color (e.g. *Schindler's List*, 1993, by Spielberg); differences in scale (e.g. *The Magnificent Ambersons*, 1942, by Welles); differences in shape (e.g. *Buck Privates*, 1941, by Lubin); differences in visibility (e.g. *Citizen Kane*, 1941, by Welles); differences in motion (e.g. *Foreign Correspondent*, 1940, by Hitchcock). Additionally, Mateer (2017) also argues that techniques regarding the understanding of human psychology can also be used in a cinematic virtual reality context. According to Mateer (2017), these are existing techniques and methods that can indeed be adapted and applied to an immersive presentation, however, it is necessary to take into account the particular aspects of the technological platform for cinematic virtual reality, for instance, the potential issues with navigation in cinematic VR. When directorial choices are able to enable a story interpretation that enhances empathy for the characters and distract users from the actual virtual reality device, then cinematic virtual reality can improve the users' experience of a movie. Nonetheless, due to the lack of frame boundaries in cinematic VR, these techniques can be difficult to apply.

Table 2.1 Opportunities and challenges of Cinematic Virtual Reality

Opportunities	Challenges
The user continuously occupies a central position within the sensorial experience. (Staubli, 2017)	Curiosity for the technological device and potential navigation issues that can interfere with the story interpretation. (Mateer, 2017)
Transports the user beyond the physical boundaries of 2D screens. (Staubli, 2017)	Inability to completely leave the knowledge of illusion. (Mateer, 2017)
Ability to produce a tactile sensorium through hand controllers. (Ross, 2020)	The hand controllers remain the only indicator of user's movement. (Ross, 2020)
Synesthetic interactions can happen with even greater proximity. (Ross, 2020)	Privilege of the story over the technological format. (Farah, Ramadan & Harb, 2019; Ross, 2020).
The technology is able to apply cinema techniques to the virtual reality context in order to capture the users' attention and guide them, enabling story interpretation. (Mateer, 2017)	Inability to apply some of the existent synesthetic techniques used in 2D cinema to manipulate the spectators' due to lack of frame boundaries (Mateer, 2017).
By shutting off the user from the outside world, the user becomes more immersed (Staubli, 2017)	The technology is still at a nascent moment: total bodily engagement and the actual transference into the technological device is not yet possible. (Ross, 2020)

Source: own elaboration.

In fact, despite the expectations the virtual reality holds in the motion picture, it is, however, still at an early stage. Similarly to the first forms of cinema, media styles and innovative modes still need to be explored and developed for cinematic VR. It is expected that multisensory realism will continue to increase in further technological updates, and there is a growing number of VR works pushing the visual, sonic and tactile limits of the users' embodiment in virtual worlds. Nevertheless, considering Ross (2020), it remains uncertain how will virtual reality development in the Classical Hollywood Cinema. Mateer (2017) also contends that the way movie grammars can be applied to cinematic VR needs further development, and the directing methods should also be refined and adjusted in order to improve the transportation affect in cinematic virtual reality.

2.4 Brand as Personality

As Keller (1993) explains, "a brand represents all the tangible and intangible attributes that consumers associate with the brand that can influence their perceptions of products that carry the brand name" (as cited in Su & Reynolds, 2017, p.1). Moreover, the literature supports that brands represent more than their functional traits. Brand personality is included in brand knowledge, and can have a psychological impact on consumers' attitudes and understanding toward a brand, "brand personality suggests that brand personality has psychological effects, influencing consumers' feelings and attitudes towards a brand, ultimately shaping brand-related behaviors, such as purchase decisions, brand loyalty, and brand love." (Su & Reynolds, 2017, p. 2). In fact, Khan and Lee (2014) further argue that those feelings are not perceived the same way to different consumers, "consumers vary in their feelings toward brands: some have positive (love) feelings, some are indifferent, and others have negative feelings (hate)." (as cited in Fetscherin, 2019, p. 116). Therefore, it is important to consider brand personality regarding the business practice and respective goals, since it can be used as a tool for brand positioning in the marketplace, and for differentiating at a symbolic level from competitors (Su & Reynolds, 2017).

As previously mentioned, the present dissertation follows Aaker's (1997, p. 347) definition of brand personality as "the set of human characteristics associated with a brand". Moreover, the literature suggests that marketing efforts can result in consumers attribution of human personality traits to brands or other inanimate subjects, "For example, consumer considered the brand personality of Oil of Olay as 'gentle' and 'down-to-earth', while Holiday Inn's brand personality has been described as 'friendly', 'practical', and 'reliable'." (Kang, Bennett and Peachey, 2016, p. 441). Therefore, like Kang, Bennett and Peachey (2016) explain, brand personality can be a powerful and effective marketing tool, that can help brands create differentiation and develop a sustainable competitive advantage (SCA).

In the article "*Dimensions of Brand Personality*", Aaker (1997) suggests that human and brand personality traits differ in the way they are formed, even though the conceptualization may be similar. On one hand, human personality traits are formed based on a certain individual's attitudes, beliefs, and physical, demographic, and behavioral characteristics. On the other hand, brand personality traits can origin and be influenced by any contact, direct or indirect, that the individual has with a specific brand. Further, perceptions of personality traits can be directly associated with

brands because of the people associated with that brand, which can be the company's employees and CEO, the typical brand users, or even brands' product endorsers. Consequently, the personality traits of these people can be transferred to brand personality traits. In order to better understand how this relationship between brand and human personality traits can impact consumers' preferences Aaker (1997), developed a framework of five personality dimensions, which are: Sincerity, Excitement, Competence, Sophistication, and Ruggedness. According to Aaker (1997) and the exploratory factor analysis conducted, which was followed by a confirmatory factor analysis, consumers perceive these five distinct personality dimensions in brands.

As Goldberg (1990) explains, since Cattel's (1945) research on the 35 cluster personality traits, several researchers have been studying the main human personality traits, which led to the representation of the main "Big-Five", which are: Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Despite the similarities to the "Big Five" human personality traits Aaker argues that brand personality traits operate differently and may influence consumer preferences in different ways, "For example, whereas Sincerity, Excitement, and Competence tap an innate part of human personality, Sophistication and Ruggedness tap a dimension that individuals desire but do not necessarily have" (Aaker, 1997, p. 353). Moreover, Aaker (1997, p. 354) mentions the importance of understanding how variables independently and interdependently may influence brand personality, and the importance of learning the symbolic use of brands, considering that "researchers suggest that brand personality increases consumer preference and usage (Sirgy 1982), evokes emotions in consumers (Biel 1993), and increases levels of trust and loyalty (Fournier 1994)".

2.4.1 Preferences for Movie Genres

According to research, consumers' personality and lifestyle influence their overall consumption preferences, and the same applies to the consumption of fictional brands, such as music or movies (Hall, 2005; Palomba, 2020; Blagov, Von Handorf, Pugh, & Walker, 2019). Additionally, and as previously mentioned, existing literature (Desai & Basuroy 2005; MacWhinney, 2015; Gazley, Clark & Sinha, 2011; Hennig-Thurau, Houston & Sridhar, 2006) also agrees that genre is an important determinant variable regarding the box office performance of a movie. Considering Palomba (2020, p. 3), "A genre is an organized set of expectations, styles, or elements within an

artform". Palomba (2020) further contends that the positive association of brand personality and movie genres is not only useful for consumers, but also for movie advertising practitioners, because it allows them to manage consumers' expectations. In the article, *Consumer personality and lifestyles at the box office and beyond: How demographics, lifestyles and personalities predict movie consumption*, Palomba's (2020, p. 9) study considered how different personalities and lifestyles can help measure the consumption of certain movie genres and movie platforms, "Consumer personalities were linked to a variety of genres here, illustrating that how consumers perceive their own personalities can help inform which movie genre they select and rate of consumption". This information and these measurements have become increasingly relevant for the motion picture industry considering the growing number of distribution and content brands (e.g. Netflix, Warner Brothers, Lionsgate, and Disney).

Considering Hall (2005), there is a positive relation between personality traits and media consumption. Hall (2005) argues that the audience's personality characteristics such as extraversion, neuroticism, and psychoticism influence genre preferences in different media (movies, television and radio) consumption habits. However, even though the Hall (2005) argues that personality traits are expressed through media consumption and behavior, Hall (2005) also considers the hypothesis that the technological characteristics of a device or a platform and the way it might be used can also be influenced by personality characteristics. Palombas's (2020) recent study claims that demographics, lifestyles and personalities are determinants that can help predict movie genres preferences and platform movie consumption, "Demographics offer 0%-19% predictability, demographics and lifestyle offer 2%-29% predictability, and demographics, lifestyles and personalities offer 4%-30% predictability. Combined, these measurements offer the most explanatory power for the superhero (R^2=.17), animation (R^2=.15), romance R^2=.15), horror R^2=.14), science fiction R^2=.13), comedy R^2=.13), and adventure R^2=.13) movie consumption frequencies." (2020, p. 9). Additionally, the Palomba (2020) contends that demographics, lifestyle and personality are not only useful to predict movie genre consumption but also platform consumption.

2.4.2 Brand Coolness

There are several definitions regarding coolness. Considering the article *Brand Coolness*, Warren et al. (2019) underline the need for research to identify the main characteristics that distinguish cool brands from uncool ones. In this article, Warren et al. (2019) follow the definition of coolness as "a *subjective* and *dynamic*, socially constructed *positive* trait attributed to cultural objects inferred to be appropriately *autonomous*" (Warren and Campbell, 2014, p. 544) and emphasize the main four features of coolness:

1) Being cool is subjective. As literature agrees, "Cool is not an inherent feature of an object or person but is a perception or an attribution bestowed by an audience" (Belk, Tian, and Paavola, 2010; Connor, 1995; Gurrieri, 2009; Leland 2004 as cited in Warren & Campbell, 2014, p. 544), meaning that not everyone perceives coolness in the same way.

2) Coolness is dynamic. The perception of coolness is continuously changing, "The things that consumers consider cool change both over time and across consumers" (Danesi 1994; MacAdams, 2001; O'Donnell and Wardlow, 2000 as cited in Warren & Campbell, 2014, p. 544).

3) Being cool is a positive quality. Both quantitative and qualitative studies suggest that coolness is a desirable trait (Warren & Campbell, 2014). Further, cool is not just another word to describe good, it implies an additional quality, "Consumers perceive some quality that sets cool things apart from other things that merely like or evaluate positively. However, the literature is not clear as to what this additional quality is." (Warren & Campbell, 2014, p. 544).

4) Coolness is autonomous, "Autonomy refers to a willingness to pursue one's own course irrespective of the norms, beliefs, and expectations of others." (Warren & Campbell, 2014, p. 544). Moreover, as Warren and colleagues explain (2019), even though it is not possible to directly observe autonomy, it can be perceived in the "attempts to be different by moving beyond conventions and norms" (Warren, et al., 2019, p. 2).

As previously mentioned, considering Aaker (1997), brand personality is a concept according to which human characteristics are associated with a brand, and it consists on the identified five core dimensions, which are: competence, sophistication, sincerity and excitement. Some brands,

such as Nike and Apple, are often considered cool brands, but they are mass cool brands. It remains important to understand how the concept of brand coolness is related to brand personality. As Warren et al. (2019) explain, it is possible that brand personality dimensions may increase or decrease the perception of coolness, and therefore, be used as antecedents. Nonetheless, it is equally plausible that marketing and sociocultural elements that influence brand personality perceptions also influence perceived coolness of a brand. Therefore, Warren et al. (2019, p. 14) decided to use Aaker's five brand personality dimensions as correlates, and not antecedents, of higher-order brand coolness, and discovered that both concepts were indeed significantly correlated and their studies also demonstrated validity with all five brand personality dimensions, "Brand coolness was most closely related to the sophisticated, competent, and exciting dimensions of brand personality".

Regarding the attribute of being cool, which literature considers a positive feeling. Warren and Campbell (2014) explain that being cool is a desirable thing by consumers and brands, however, this concept remains ambiguous and raises the ultimate question which is: what makes things cool?

A qualitative and quantitative approach (three qualitative studies and nine quantitative) in the article *Brand Coolness* (2019), allowed research to confirm that "increasing the extent to which a brand seems desirable, autonomous, rebellious, high status, and popular increases the extent to which it is perceived to be cool" (Warren et al., 2019, p. 17). However, this article also contributes to the understanding of the Life Cycle of Coolness, and how there are different types of brand coolness, considering that characteristics may change throughout the life cycle. Coolness is a dynamic concept and its theoretical Life Cycle explores how brands go from uncool brands to niche cool brands, and consequently start spreading to the masses, becoming mass cool brands, which results in losing their cool because they become mainstream and undifferentiated from other brands (Warren et al., 2019).

In addition to understanding the different stages of cool brands, this research proposes a scale to measure brand coolness and identifies the main characteristics that cool brands hold. Thus, research on Brand Coolness also explains that even though not every characteristic has to necessarily be present for a brand to be perceived as cool, but the more increased they are, then higher the chances of being seen as cool, "cool brands are extraordinary, aesthetically appealing, energetic, original, authentic, rebellious, high status, subcultural, iconic and popular." (Warren et al., 2019, p. 17). Moreover, Warren and colleagues (2019), suggest that consequently, when a brand is perceived as cool, then the consumers' attitudes toward the brand are more favorable, their WTP

(*willing-to-pay*) is higher, and it can also result in positive WOM (*word-of-mouth*). Regarding business practices, research proposes that in order to benefit from brand coolness, managers should focus on reinforcing the lacking characteristic(s), and further suggests that, for instance, brands that want to be perceived as more energetic and original, should seek ways of continuously innovating. As Warren et al. (2019, p. 18) explain, being iconic is a characteristic that can be perceived as cool, and additionally mention that memorable advertising style and brand myths can contribute to increasing such characteristic, "Becoming iconic is not easy, but brands might be able to seem more iconic through distinctive packaging (e.g., the Coca-Cola contour bottle), a *memorable advertising style* (e.g. the early artistic and witty campaigns of Absolut vodka), or *telling a brand myth that resonates with the consumers* (e.g. the nostalgic frontier story of Jack Daniels; Holt and Cameron 2010)" (emphasis added).

2.4.3 Enhancing Brand Coolness through Storytelling and Virtual Reality

Regarding the importance of a memorable advertising style, Leung, Lyu and Bai (2019) argue that messages presented in virtual reality technology provide and immersive quality experience and allow for interactivity. Considering the technological device, virtual reality headset blocks the external environment, the user pays directed attention to the VR experience and is not distracted by stimuli from the external environment, like lights or noises. Consequently, directed attention can be related to memory, "since directed attention is shown to play an important role in memory, high perceptual loads should improve the performance of memory-related tasks. Hence, compared to traditional commercials, VR commercials should enhance consumers' ad recognition and brand recall." (Leung, Lyu and Bai, 2019, p. 3). Through a quantitative analysis applied to the hotel industry, Leung, Lyu and Bai (2019) compared the long-term effectiveness of VR commercials and traditional advertising and found that "VR commercials elicited better ad memory than traditional commercials is consistent with previous studies (Bhattacharjeea et al., 2018). However, traditional commercials seem to do a better job at enhancing brand awareness than VR commercials." (Leung, Lyu and Bai, 2019, p. 7).

Moreover, regarding the use of virtual reality in marketing for retailing, Pizzi, Vannucci and Aiello (2019) argue that the levels of presence in individuals exposed to a VR experience are higher

than the levels of presence in participants exposed to a physical store environment. Additionally, higher feelings of presence consequently result in higher levels of shopping experience, which may enhance consumers' value perceptions toward the retailer. However, Pizzi, Vannucci and Aiello (2019) also mention that despite the fact a virtual reality experience can develop more positive value perceptions, as a response to the retailer's adoption of innovative technologies; on the other hand, it might also result in customers focusing only on the experience itself and not precisely the retailer. In order to clarify this contradiction, Pizzi, Vannucci and Aiello's (2019, p. 7) study contributes to literature by showing that "even when consumers do not consciously retain knowledge of the retail brand operating the virtual store, the sense of presence and involvement in the virtual environment still leads to higher levels of value perceptions and patronage intention.".

However, the way different people may experience virtual reality environments can vary. As Jung, Yu, Seo, and Ko (2019) demonstrate in a study that presents utopian (democratization and escapism) and dystopian (anxiety inducing) themes in a virtual reality environment, participants can have different interpretations of virtual reality communications. On one hand, some people reflect positive feelings toward the VR environment, describing it as an exciting, joyful and even empowering experience. Contrarily, some of the participants felt negative feelings, such as loneliness, fear and anxiety. According to Jung, et al. (2019), the way different people may interpret those experiences is related ontological properties of VR technology (between 'the virtual' and 'the material'), and also to cultural discourses of utopia and dystopia. Therefore, Jung, et al. (2019) further argue that despite the benefits virtual reality communications hold, it is also important that managers consider the contextual topography of cultural narratives, "At the broadest level, this could mean avoiding intertextual connections between VR consumption and dystopian themes, such as product placement in narratives depicting an apocalyptic future, or fostering stronger associations with utopian themes of consumer empowerment and emancipation." (Jung, et al., 2019, p. 6).

As previously stated, virtual reality provides an experience in consumers which can be perceived as negative and positive. Despite the existent literature over the last years that considers the application of virtual reality in marketing and advertising, and includes its influence on several constructs, such as, attention, presence, engagement, brand image, and brand attitudes, it remains, however, to be understood whether virtual reality has the ability to affect brand coolness perceptions in consumers.

Furthermore, considering storytelling as a way to enhance brand coolness, as previously mentioned, Warren et al., (2019), also suggest that brands might seem more iconic by telling a brand myth that resonates with consumers, in fact, "consumers identify with brands whose identities map onto their own identities" (Sanders and van Krieken, 2018, p. 6). Moreover, studies show that stories are part of humans' social and cultural environment, and consequently, consumers also communicate and think in terms of stories, therefore, regarding brands, stories also help consumers understanding the brand, "Holt (2003) argues that iconic brands are the result of the consumer interaction with the brand, the "breakthrough performance of the brand" and the stories that consumers share about their experiences with the brand, that eventually become mythic." LaTour, LaTour, & Zinkhan, 2010, p. 329). Additionally, telling a brand myth that resonates at a deeper level can contribute to building a strong brand, "Nowadays, in the era of branding, much research on the relationship between story structure and narrative transportation, and the relationship between storytelling and brand image highlights the importance of brand story on building a strong brand" (Ryu, et al., 2019, p. 356).

Furthermore, considering the concept of self-brand connections (SBC), which indicates the strength of a connection between a certain brand and the self (Escalas, 2004), research suggests that narrative structure can be positively related with higher levels of self-brand connections. According to Gaustad, Samuelsen, Warlop, and Fitzsimons (2018), consumers tend to use brands to construct their own self-concepts and sense of identity, and one way of doing so is by associating specific brands as part of who they are. Considering Warren et al.(2019), it is possible that brand coolness has consequently an impact on SBC. In fact, according to literature SBC can be influenced by narrative structure (Escalas, 2004) and also a consequence of brand coolness (Warren et al., 2019).

However, Gaustad and his colleagues (2018) also contend the possibility that despite the positive value and benefits (psychological and financial) of consumer and brand bonds, those associations with the self may also have negative outcomes, especially when changes occur. Considering the existing literature, SBC can have positive but also negative outcomes (Gaustad et al., 2018), and as Warren et al. (2019) argue SBC can be a consequence of brand coolness. However, as previously mentioned, coolness is a dynamic and also autonomous concept (Warren and Campbell, 2014), meaning that when initially an autonomous brand loses its autonomy and becomes more widespread to the masses, then the level of consumers' SBC may also be affected

both positively and negatively. For instance, as Warren and Campbell (2014) explain, the band Green Day used to be considered highly autonomous to a very specific punk subculture, however, as they released the success album *Dookie*, they became more famous to the masses but were simultaneously accused of "selling out" especially by original fans, who no longer identified with the brand. On the other hand, however, the album sold more than 20 million copies and the band became cool to a wider audience, becoming an international success. Therefore, SBC is a consequence of brand coolness (Warren et al., 2019), and it might be influenced positively and negatively throughout the Brand Coolness Life Cycle "(…) although negative brand information does not threaten the self, consumers perceive that the *meaning* of the brand changes." (Gaustad et al., 2018, p. 826).

3. Empirical Study and Methodology

3.1 Conceptual Model and Hypothesis

Regarding the existent literature, the proposed conceptual model design tries to contribute to the needs of the literature in the Marketing and Cinema area by suggesting an investigation on how the Format (2D and VR) and the Movie (documentary and adventure) may affect consumers' perceptions of brand coolness, levels of sympathy and empathy, and word-of-mouth. Further, it is also the present study's goal to understand how the construct of brand coolness applies to brands based on hedonistic consumption, and how emotional responses influence brand coolness perceptions and WOM.

The conceptual model (Figure 3.1) considers, therefore, the dissertation's main research questions and hypothesis, and entails an attempt to explain how the different constructs explored in the literature review will be assessed throughout the experimental design.
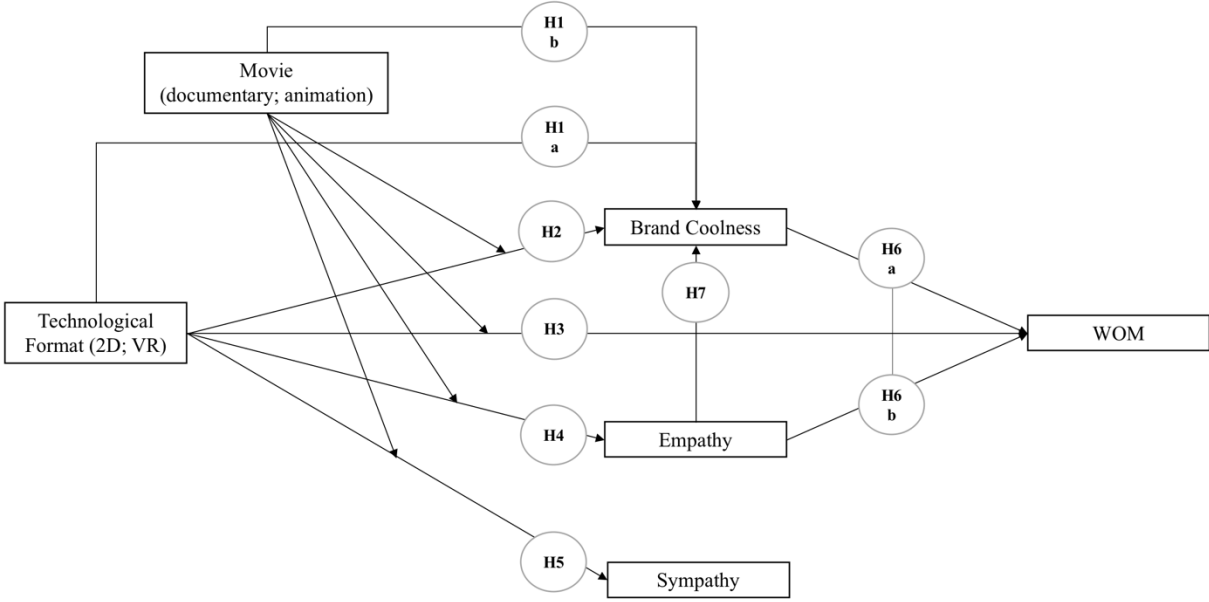

Figure 3.1 Conceptual Model
(Source: own elaboration)

As previously stated, movies are considered fictional brands, "A fictional brand is a non-existent brand used in artistic or entertainment productions – paintings, books, comics, movies, TV serials, etc." (Muzellec, Kanitz, & Lynn, 2013, p. 400). However, to our knowledge, scientific research regarding brand coolness perceptions on fictional brands has not yet been explored.

Brand coolness has been investigated in the marketing literature as a positive quality that both brands and consumers desire (Warren & Campbell, 2014). However, it is also a highly subjective concept, meaning that what might be cool for some people, might simultaneously be considered uncool for others, hence its subjectivity. Considering the article *Brand Coolness*, Warren et al. (2019, p.17) identify, according to empirical research, the ten main characteristics of coolness, "cool brands are extraordinary, aesthetically appealing, energetic, original, authentic, rebellious, high status, subcultural, iconic and popular.". Warren et al. (2019) further argue that, regarding business practices, in order for a brand to increase its coolness perceptions it doesn't necessarily require the ten characteristics but should be able to identify the characteristics that are lacking and reinforce them. Thus, we hypothesize if brand coolness perceptions are significantly affected by the technological format in which a movie is presented, and if so, whether that impact is positive, i.e. reinforces the existent characteristics, or is negative, leads to a decrease in coolness perceptions.

Hypothesis 1a: Perceptions of brand coolness in movies vary with the format.

Considering the motion picture industry, existing literature (Desai & Basuroy 2005; MacWhinney 2015; Gazley, Clark & Sinha 2011; Hennig-Thurau, Houston & Sridhar 2006) contends that the movie genre is an important determinant of movie consumption decisions by the audience. Furthermore, movie genre preferences are also positively related to personality, and as Palomba (2020, p. 10) argues, it's important for consumers and advertising practitioners in the industry to understand consumers' different personalities and lifestyles considering that it can help measure and predict movies' consumption, "Aside from targeting movies toward audience, this may aid advertisers and marketers in understanding what types of movie trailers and pre-movie exhibition advertisements might pique the interest and attention spans of audience members".

On this basis, it is appropriate to try to understand what brand coolness characteristics do consumers that have watched the documentary or the animation movie value the most, and how

those perceptions may vary. Furthermore, it would be additionally relevant to comprehend how these variables relate because it would allow marketers in the industry to grasp which characteristics of brand coolness in different movie genres are lacking and should be reinforced. Additionally, considering that movie preferences are positively related to personality, it would also contribute to the understanding of how audiences with different movie preferences and personalities perceive coolness in movies. Hence, we hypothesize that:

Hypothesis 1b: Perceptions of brand coolness are not the same for different movies.

The present study further considers two different formats to experience a movie: through traditional 2D screens and through Virtual Reality (VR).

Virtual Reality technology is able to provide immersive experiences that appeal to users' senses and shutter them from the outside world. Similarly to other industries (such as marketing, tourism, retailing and education), the motion picture has also started exploring and investing on possible applications of this technology in the making of movies and in their promotion, for instance, through games and trailers (Ding, Zhou and Fung, 2018).

Thus, considering the importance of the technological formats in the motion picture industry and marketing literature on brand coolness, it is of interest to the present dissertation to understand how VR and the movie genre impact the audience's brand coolness perceptions.

Hypothesis 2: The technological format (2D or VR) and the movie (documentary and animation) have a significant effect on brand coolness.

Moreover, Ross (2020) explains that VR can provide processes that create a more direct experience of the movie to the spectator and can even heighten empathy in the audience. As Escalas and Stern (2003) and Rooij (2019) explain, empathy is a stronger emotional response than sympathy and, therefore, a key element when examining the emotional relationship between the spectator and the fictional characters. Even though both concepts are interconnected, empathic responses arise when a person is absorbed in another person's feelings. Sympathy, on the other hand, is a more distant feeling and occurs when a person, without being absorbed in another person's feelings, is able to acknowledge and be aware of another's feelings. According to Shin

and Biocca (2017) at the core of a VR experience is the empathy factor, and virtual reality can transport users to virtual dimensions, in which they are immersed in a realistic environment (Shin and Biocca, 2017; Feng, Xie and Lou, 2019). Moreover, as Green and Brock (2000) and Escalas and Stern (2003) contend, an empathetic reader/viewer may experience transportation, which in turn, may result in more effective persuasion, higher realism of the experience, reduced cognitive responses and stronger affective responding.

Considering Escalas and Stern (2003), empathic responses have been considered by authors and critics of the motion picture industry as the ultimate experience of watching a movie. In fact, as Staubli (2017, p. 1) argues, "VR instantly achieves what some great innovators in filmmaking have strived for, often in ingenious and surprising ways, since the dawn of cinema: to transport the viewer beyond the physical boundary of the two-dimensional screen to another place, for an embodied, sensory and participatory experience.".

Nonetheless, even though Shin (2018) agrees that embodiment and the empathy levels determine the quality of the experience, Shin (2018) also explains that the presence and the flow of the experience itself may not be more than an initial reaction, which can or not be developed to an emotional level. According to Shin (2018, p. 70), the technological ability of VR to increase the users' level of empathy cannot be unattached of the users' own cognitive acts, "Within the users' sensemaking, two processes of different natures can be identified: the immersion quality is established explicitly and implicitly by users, and then the empathy starts to kick in.". Thus, considering the motion picture industry, VR is able to provide direct sensory stimuli by using head-mounted-displays (HMDs), which shutters VR users from the outside world, however, it is also the content that the technology delivers that can determine users' feelings in the virtual world. In fact, as Kerrigan (2018) suggests, movies' importance lays on their ability to tell myths, notwithstanding the technology used to do so. Therefore, the importance of the content that is delivered in addition to the technology itself plays a crucial role in the overall experience.

Moreover, despite the expectation's virtual reality holds in the motion picture industry, Ross (2020) and Mateer (2017) also explain that VR in the motion picture is still at an early stage, as it faces synesthetic challenges and requires media styles and innovative modes to be explored and developed for cinematic VR. Considering Ross (2020), total body engagement and the actual transference into the VR device is not yet possible. Nonetheless, Ross (2020) also contends that some movies are able, through synesthetic techniques, to provide the audience with pleasures and

a movie experience that doesn't necessarily require any further technological application. Additionally, considering Mateer (2017), not all existing cinematic techniques and methods can be applied to VR, hence new ones need to be explored and developed.

Therefore, considering the expectations but also the limitations and challenges virtual reality has regarding its application in the motion picture industry, it would be relevant to understand how the technology affects consumers' empathy, sympathy, and brand coolness perceptions comparing with 2D traditional screens. On this basis, we hypothesized that:

Hypothesis 3: The technological format (2D or VR) and the movie (documentary and animation) have a significant effect on sympathy.

Hypothesis 4: The technological format (2D or VR) and the movie (documentary and animation) have a significant effect on empathy.

Furthermore, considering the motion picture industry characteristics and as previously stated, the industry is a risky venue (Eliashberg, Hui and Zhang, 2007). The failure of a movie regarding box office performance can have a high negative financial impact on movie studios, even major ones (Eliashberg, Hui and Zhang, 2007). Nonetheless, as literature contends, both positive and negative WOM plays a crucial role in determining moviegoers' consumption decisions as it allows consumers to evaluate the quality of a movie even before watching it. In fact, WOM can be decisive of a movie's success, considering that positive WOM can lead to a greater audience watching the movie and, therefore, greater box office performance (Yoon, Polpanumas and Park 2017; Craig, Greene, and Versaci 2015).

Therefore, and considering the recent investments in virtual reality by movie studios (Ding, Zhou and Fung, 2018), the present study also hypothesizes how does the technological format and the movie content affect word-of-mouth.

Hypothesis 5: The technological format (2D or VR) and the movie (documentary and animation) have a significant effect on WOM.

Literature on brand coolness (Warren et al., 2019) suggests that positive brand coolness perceptions can result in positive brand attitudes, such as positive word-of-mouth (WOM) and

higher willing-to-pay (WTP). However, as previously stated, the concept of brand coolness remains – to our knowledge – unexplored regarding fictional brands. Therefore, considering the motion picture industry, we hypothesize that positive brand coolness perceptions of movies can result in positive WOM, which could in turn contribute to the success of a movie.

Hypothesis 6a: Movies' coolness perceptions influence WOM.

As Sheldon (2019) contends, 'directed empathy' while experiencing a movie can result in an emotional connection. Considering literature in general advertising and emotional research, empathy responses can impact and influence consumers' attitudes toward advertising. Further, psychology studies suggest that experiencing positive emotions may impact sharing. Considering the article "*Viral video ads: Emotional triggers and social media virality*", Nikolinakou and King's (2018) explain that emotional engagement is a key driver for viral video ads and for WOM. As previously stated, word-of-mouth is a powerful brand attitude that can either be positive (and lead to a greater audience) or negative (can influence consumers not to watch a certain movie). Hence, based on existing research in the present study we hypothesize whether higher levels of empathy responses to movies can lead to positive WOM (higher willingness to recommend and to talk about).

Hypothesis 6b: Empathy responses to movies influence WOM.

As previously mentioned, Escalas and Stern (2003) argue that in advertising, sympathy responses to an ad can result in positive consumers' attitudes. Nonetheless, empathy responses have an even greater ability to influence those attitudes, since empathy responses origin from a strong emotional connection in which the viewer is absorbed in another's person feelings, and that person can be a character from an ad, or a character from a movie. Thus, empathy responses are considered by film criticism and literature as the ultimate experience (Sheldon, 2019). However, as Shin (2018) explains, whether users feel empathy depends on the users' own traits and cognition.

Emotions and feelings can indeed have and high impact on the way users perceive narratives and how does that reflect in terms of attitudes and judgments (Kemp, Bui and Chapa, 2012). Considering Brand Coolness, Warren and colleagues (2019) contend that when a brand is considered cool, consequently consumers' attitudes are more favorable. Therefore, it would be of

interest to this research to understand whether brand coolness perceptions are affected by strong emotional responses, more precisely, by empathy.

Hypothesis 7: Empathy responses to movies influence brand coolness perceptions.

3.2   Methodology

3.1.1 Research Type

In this chapter, the methodology followed to achieve the main objectives and to test the hypotheses is explained. The dissertation may employ different research strategies, exploratory, explanatory and descriptive. While some belong to the deductive research approach, considering that it deduces hypotheses based on the existent theoretical literature, which is later subjected to empirical examination (Bryman, Bell and Harley, 2011). On the other hand, other strategies belong to the inductive approach (Saunders, Lewis and Tornhill, 2009). According to Saunders, Lewis and Tornhill (2009), there is no inherent superiority between the research strategies types, since the most important step is to choose a research strategy that enables to answer the established research questions and respective hypotheses, in order to meet the study's goals.

The research methodology type of the present study consists of a quantitative research, which is experimental and based on factorial design research. A factorial design is a type of experimental design (Uhl, 1962, p. 63). More precisely, a factorial design is "a statistical experimental design is used to measure the effects of two or more independent variables at various levels and to allow for interactions between variables" (Malhotra, 2006:237). In that sense, this research follows a factorial design that considers interactions between the independent variables, which are: the movie story (documentary and animation) and the technological format (2D and VR) on the dependent variables: brand coolness; sympathy; empathy; and WOM.

This research allows for a methodology that measures the effects and interactions of the variables, and as Malhotra (1993, p. 237) explains, "an interaction is said to take place when the simultaneous effects of two or more variables are different from the sum of their separate effects.". Therefore, it is this dissertation's aim is to employ several factor analyses to study the interactions

between variables and understand how they are influenced. In order to study the proposed hypothesis statistically, the chosen method to obtain primary data was a questionnaire, which allows the collection of quantitative data. (Saunders, Lewis and Tornhill, 2009).

3.1.2 Questionnaire

Supported by previous studies, the questionnaire was developed according to measurement items generated from literature. The items included in the questionnaire allow the collection of all the required information to analyze each construct presented in the proposed conceptual model. Using existing scales ensures the validity and reliability of this quantitative instrument. The questionnaire was created using the Google Forms platform, and prepared in English, since the movies used in the experiment were also in English. The movies take in between 12 to 22 minutes to watch (depends on the movie the participant chose) and the survey takes on average 5 minutes to fill.

The questionnaire is divided into several parts. In the introduction, participants are explained what to expect next and, on average, how long the overall experiment takes. The YouTube URLs to the movies (*Crow: The Legend* and *Is Anna Ok?*) are included in this section and only participants who have confirmed the checkbox that says "Yes, I have watched one of the movies", can proceed to the questionnaire.

The second section considers demographic questions regarding age, gender and nationality, which allows for an analysis of the sample profile.

Naturally, participants were only asked to answer questions related to their own experience watching a specific movie, the adventure or the documentary movie. Therefore, the third section asks which of the following movies did participants watch (either in 2D or in VR) and directs them to the respective section that corresponds to the movie they have watched. While section 4 to 6 relates to *Crow: The Legend*, on the other hand, section 7 to 9 relates to *Is Anna Ok?*. Even though the items in the questionnaire are the same for all the movies, participants experienced different movies.

The present study uses multiple items to measure the constructs in the model. In the sections regarding brand coolness perceptions (section 4 for the adventure movie, and section 7 for the documentary movie), 12 items were included. From those 12 items, 10 were derived from the article *Brand Coolness*, by Warren and colleagues (2019). In this article, Warren, et al. (2019) identify that cool brands are extraordinary, aesthetically appealing, authentic, rebellious, high

status, subcultural, iconic and popular. According to Warren et al. (2019) a brand or a consumer segment doesn't necessarily require the ten mentioned characteristics, however, increasing the identified characteristics tends to increase brand coolness perceptions. Based on this scale, participants were asked to indicate their responses on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). In addition to the ten mentioned items, two other items regarding brand coolness were included. These were not retrieved from any existing scale but can contribute to the interpretation of the results. The two items in question are: "After watching the movie, how cool would you consider it?" (multiple choice question) and "Considering your overall experience watching the movie, how cool would you perceive it?" (7-point Likert Scale, 1 = very uncool, 7 = very cool).

The next sections (section 5 for the adventure movie, and section 8 for the documentary movie) consider the constructs of empathy and sympathy. The items used in this section were retrieved from the article *Sympathy and Empathy: Emotional Responses to Advertising Dramas*, by Escalas and Stern (2003). However, this scale was adapted to the present study, which considers movies instead of advertisings. Moreover, in the mentioned article, the original scale includes 10 items (5 for empathy and 5 for sympathy), nonetheless, instead of using the full scale, only the three items with higher significance values on empathy and on sympathy were included for the present research (please see annex A.2). Similarly to the previous section, participants were again asked to indicate their responses on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) considering empathy and sympathy.

Finally, in the sections regarding word-of-mouth (section 6 for the adventure movie, and section 9 for the documentary movie), two items were used to analyze this variable. Willingness to talk about and to recommend – in this case, movies – is widely used in practitioner and academic studies to measure positive WOM. Hence, based on the participants' experience watching one of the movies, the questionnaire includes items that consider how likely participants are to talk and recommend the movies based on their experience. In this case, a 7-point Likert scale was used (1 = very unlikely, 7 = very likely).

The last section of the questionnaire was used to thank respondents for their participation in the study.

Table 3.1 Questionnaire items

Construct	Items	Source
Brand Coolness	I think the movie was extraordinary.	Warren et al. (2019)
	I think the movie was energetic.	
	I think the movie was aesthetically appealing.	
	I think the movie was original.	
	I think the movie was authentic.	
	I think the movie was rebellious.	
	I think the movie was of high status.	
	I think the movie has the potential to be popular.	
	I think the movie appeals to subcultures.	
	I think the movie has the potential to be iconic.	
	After watching the movie, how cool would you consider it?	
	Considering your overall experience watching the movie, how cool would you perceive it?	
Sympathy	Based on what was happening in the movie, I understood what the characters were feeling.	Escalas and Stern (2003)
	Based on what was happening in the movie, I understood what was bothering the characters.	
	I was able to recognize the problems that the characters in the movie had.	
Empathy	While watching the movie, I felt as though I was one of the characters.	Escalas and Stern (2003)
	While watching the movie, I felt as though the events in the movie were happening to me.	
	While watching the movie, I felt as if the characters' feelings were my own.	
WOM	I will talk to other people about this movie.	Zeithaml, Berry, and Parasuraman (1996)
	I will recommend this movie to other people.	

Source: Own elaboration.

3.1.2.1 Pilot Test

Before launching the questionnaire to collect the required data and to validate the chosen technique, a pilot test was performed. A pilot test allows us to refine the questionnaire so that respondents don't have any problems or confusion in answering and understanding the items (Saunders, Lewis and Tornhill, 2009). By performing a pilot test the present study assesses the questions' validity and ensures that that the data collected through the online questionnaire will enable the proposed research questions and hypothesis to be answered. The selected group, composed of six elements, was randomly selected and the invitation to fill the questionnaire was sent via email or through the Whatsapp application.

3.1.3 Data Collection

We decided to use two existing movies in order to increase this study's ecological validity. The movies chosen for this research follow the two main criteria established: (1) commercial availability; (2) VR and 2D counterparts' availability. Having the respective 2D and VR counterparts ensures that the movie format is the only difference being assessed in this experiment, while other factors such as story plot, visual elements and characters remain the same. The Oculus platform provides Oculus' users with the opportunity to download content that can be experienced in virtual reality. The content can range from games, video clips, or even short movies. Considering the present dissertation's topic, two different movie genres were considered: animation and documentary. As research contends (Wehrmann and Barros, 2017), a single movie can be labeled with multiple genres. In this case, the two movies selected for this study are also short movies that were computer generated. Considering the defined research objectives, the three short movies with 2D counterparts available were selected: *Is Anna Ok?*, *Abe* and *Crow: The Legend*. The 2D counterparts are available on YouTube, and the VR version was downloaded to be experienced with the Oculus Rift headset device.

Table 3.2 Experiment stimuli.

Movies	*Genre*	*Description*	*YouTube URL*
Crow: The Legend	Animation, adventure	The forest animals thought Spring would last forever, but as winter comes, they realize they need a hero to bring back the good weather.	https://www.youtube.com/watch?v=AO4PrtAKu2E
Is Anna Ok?	Documentary	Anna suffered a brain injury in a car accident and the story introduces how Anna and Lauren, her twin sister, dealt with the complexity of trauma and health and mental issues.	https://www.youtube.com/watch?v=vlo-KOCqOHA

Source: own elaboration.

The factorial design research considered, therefore, two groups of participants: the control group, in which the respondents watched one of the movies through YouTube in 2D format; and the experimental group, in which the participants were invited to experience one of the movies through VR format. Once participants were done, they were asked to fill the questionnaire, which includes the same items.

The control group was able to participate in the experiment from home, since the questionnaire and the movie were online, and no additional materials were required. The introduction to the questionnaire included the YouTube URLs, so that participants could choose one movie to watch according to their movie genre preferences (adventure or documentary) and afterward fill the questionnaire.

However, for the experimental group, the procedure had to be performed in person, due to the use of the virtual reality material. Unfortunately, due to COVID-19 and social isolation, one of the main struggles of the present study was to collect the required number of responses. While the control group was able to participate in the research during the month of March 2020, on the other hand, the experimental group only started in June 2020. The procedure for the experimental group was similar to the control group. Meaning, participants were first exposed to one of the movies of their choice, according to their movies' preferences, and then filled the same questionnaire online in a computer provided for the experiment. Nonetheless, before starting the experiment,

respondents were given a brief explanation on how to use the VR device and controls, what to expect, and warned that possible nausea or dizziness could occur, thus, they could interrupt the experience at any time.

4. Data Analysis

4.1 Data Treatment

Once the needed number of participants was reached, the data was downloaded from Google Forms and extracted to Microsoft Excel. Afterwards, the data was uploaded to the software program Statistical Package for the Social Sciences (SPSS) 25. The variables were evaluated with a 7-point Likert Scale (1= "Strongly disagree" and 7= "Strongly agree").

The IBM SPSS 25 was used to first calculate the descriptive statistics, and then to test the hypothesis through two-way ANOVA and linear regression analyses in order to understand the relation between variables and understand the mediator and moderator outcomes.

According to Elliot and Woodward (2007), a two-way ANOVA analysis allow the evaluation of the combined effect of two experimental variables, which in this case are the technological Format and the Movie. More precisely, through this analysis it is possible to understand whether the independent variables are important explaining the dependent variables either separately (main effects) or in combination (interaction). According to Hair, Celsi, Bush, and Ortinau, (2016), it is appropriate to use a two-way (or n-way) ANOVA in experimental designs, such as this one, in order to measure responses to different levels of a stimulus. In fact, as Hair, et al. (2016) explain, a factorial model is a type of ANOVA, since we are considering separately the effects of each individually independent on the dependent variable, and then also include the combined effects of the interaction between independent variables. Through this analysis the stimuli differences (between formats and movies) will be statistically assessed in order to understand if their impact on the dependents brand coolness, sympathy, empathy and WOM are meaningful and significant.

When conducting a Two-Way ANOVA it is important to bear in mind the following assumptions (Elliot and Woodward, 2007): (1) Independent samples; (2) Normality; (3) Equal variances. However, according to Elliot and Woodward (2007), studies have shown that both Two-way and One-way ANOVA are robust against moderate departures regarding the normality and equal variances assumptions.

Considering the factorial design of this research, it is possible to determine the assumption of independence (1) from the design of the study. Further, the Normality (2) assumption was tested through the values for skewness and kurtosis, the Shapiro-Wilk test and the graphical Q-Q plot

(please see annex D.7). It is recommended (Hair, Black, Babin, & Anderson, 2009) to use both the graphical plots and the statistical test in order to assess the degree of departure from normality (see annex D.5). Regarding the third assumption, homogeneity of variances (3), a Levene's Test was conducted (see annex D.5). Moreover, it is also important to consider the possible existence of problematic outliers, which can distort statistical tests (Hair, et al., 2009). Outliers will be identified through the boxplots (see annex D.7).

Since not all of the two-way ANOVA assumptions were met, a non-parametric test was additionally performed. The Mann-Whitney test allows us to test the equality of the distribution of the dependent variables by the independent Format (2D, VR), and then conduct a second analysis with the independent Movie (documentary, animation). However, it does not consider the interaction effect of the independents on the dependent variables.

Regression analyses were used to test hypotheses 6 and 7. It is a technique applied with the purpose of understanding how a dependent variable can be predicted by one or more independent variables. Thus, it analyzes if there is a relationship between variables and the overall strength of that association and relation (Hair, et al., 2016). While a simple regression analysis (hypothesis 7) considers only one independent variable, a multiple regression analysis (hypothesis 6) involves two or more independents.

Considering Elliot and Woodward (2007), when performing a linear regression analysis three assumptions must be involved: (1) Normality; (2) Equal variances; (3) Independence. Further, according to Hair and colleagues (2016), regarding multiple regression assumptions, it is important to consider (1) linear relationship, (2) normal distribution and (3) homoskedasticity (constant pattern of covariation). The valid implementation of this technique requires, therefore, prior verification of the following:

- The dependent variable is quantitative.
- Linearity of the relationship between each independent and dependent variable. By construction the theoretical models in hypotheses 6 and 7 assume linearity.
- There is no correlation between the residual terms. This assumption is tested through a Durbin-Watson test, which can take values between 0 and 4. The assumption is valid when this test's value is close to 2, which indicates the lack of correlation between the residues and, therefore, suggests their independence.
- The residuals must have an expected value equal to zero.

- Homoscedasticity of the data (the residue variance must be constant).
- Normality of the deviations (residues must be distributed in an approximately normal way).
- The explanatory variables are not correlated. The Variance Inflector Factor (VIF) measures the extent to which an explanatory variable can be explained by the other explanatory variables in the model. Thus, if the VIF value is higher than 10, there are correlation problems among the independent variables and the assumption does not hold.

4.2 Profile of the Sample

The global sample of the population consisted of a total of 145 participants.

Regarding the distribution of gender in the global sample, our sample consists of more female than male respondents. While the female represents 62.1% of the sample, the male participants represent 37.9% as shown Table 4.1.

Table 4.1 Gender

Gender			
Female		**Male**	
Frequency	Percentage	Frequency	Percentage
90	62.1	55	37.9

Source: own elaboration based on SPSS outputs

The age of the participants ranges from 16 to 82 years old and the average was 32 years old.

Table 4.2 Age

Age	
Mean	31.8

Source: own elaboration based on SPSS outputs

The global population of the questionnaire comprised 9 different nationalities, being the majority Portuguese with 127 (87.6%) respondents. In exception for one participant, who is from Colombia, 99.3% of the participants in the sample are European. The second largest percentage regarding nationality refers to Germans participants, which represent 7.6% of the global sample with 11 respondents. The other nationalities represent 4.9% (0.7% each) of the sample and are described in detail in Table 4.3.

Table 4.3 Nationality

Nationality	Frequency	Percentage
Austria	1	.7
Belgium	1	.7
Colombia	1	.7
Germany	11	7.6
Italy	1	.7
Portugal	127	87.6
Serbia	1	.7
Spain	1	.7
United Kingdom	1	1
Total	145	100

Source: own elaboration based on SPSS outputs

5. Results

5.1 Descriptive Analysis

5.1.1 Profile of the Control and the Experimental Group

From the total of the 145 participants, 78 (53.7%) respondents were part of the control group, which experienced the movies in 2D format. The other 67 (46.2%) respondents were part of the experimental group, that experienced the same movie in a different technological format, more precisely, in Virtual Reality (VR).

In both groups the profile of the people that answered the questionnaire was balanced. Regarding gender, from the global sample, 90 (62.1%) respondents were female and 55 (37.9%) were male. However, as we can see in Table 5.1, while the control group had a higher number of male participants (58.2%), the experimental group on the other hand has fewer male participants, representing 41.8% of the group. As previously mentioned, in the global sample, the average age of the participants is 32 years old. Both groups are also balanced considering the participants' age, since the average in the control group is also 32, and in the experimental group is 31 years.

Table 5.1 Gender and age

	Gender				Age
	Frequency		Percentage		Mean
	Female	Male	Female	Male	
Control Group (2D)	46	32	51.1	58.2	32.1
Experimental Group (VR)	44	23	48.9	41.8	31.4
TOTAL	90	55	62.1	37.9	31.8

Source: own elaboration based on SPSS outputs

The majority of participants in the control group and in the experimental group are Portuguese, as we can observe in Table 5.2. However, the percentage of Portuguese participants in the control group is higher (57.5%) than in the experimental group (42.5%).

Table 5.2 Frequency and Percentage of Nationalities

Nationality	Control Group		Experimental Group		Global	
	Count	*% within Nationality*	*Count*	*% within Nationality*	*Count*	*%*
Austria	0	0	1	100	1	.7
Belgium	1	100	0	0	1	.7
Colombia	0	0	1	100	1	.7
Germany	3	27.3	8	72.7	11	7.6
Italy	1	100	0	0	1	.7
Portugal	73	57.5	54	42.5	127	87.6
Serbia	0	0	1	100	1	.7
Spain	0	0	1	100	1	.7
United Kingdom	0	0	1	100	1	1
Total	78	53.8	67	46.2	145	100

Source: own elaboration based on SPSS outputs

Each participant from both the control and the experimental group was asked to choose between an animation and a documentary movie. In both formats (2D and VR) the animation movie, "Crow: The Legend" had more respondents (57.2%) than the documentary (42.8%).

Table 5.3 Participants per format and movie

Format	Crow: The Legend		Is Anna Ok?	
	Count	*% within Format*	*Count*	*% within Format*
2D (control group)	46	59.0	32	41.0
VR (experimental group)	37	55.2	30	44.8
Global	83	57.2	62	42.8

Source: own elaboration based on SPSS outputs

5.1.2 Brand Coolness

As previously explained, coolness is considered a positive and desirable attribute and, regarding brands, being perceived as cool can result in more favorable consumers' attitudes. (Warren and Campbell, 2014). According to Warren and his colleagues (2019), the more increased the brand coolness characteristics are, then the chances of being perceived as cool are also higher.

In addition to the ten items included from the Brand Coolness Scale (Warren, et al. 2019), this research also included the question "Considering your overall experience, how cool would you perceive it?". All the items were measured according to a Likert Scale from 1 (strongly disagree) to 7 (strongly agree). As we can observe in Table 5.4, the means from the group who experienced the movies in virtual reality (the experimental group) are higher in all the Brand Coolness items. This observation applies to both movies.

Considering only the ten items from the Brand Coolness Scale (Warren, et al. 2019), in the animation movie *Crow: The Legend*, the items with higher means in the control group (2D) are "I think the movie was aesthetically appealing" and "I think the movie has the potential to be popular". Regarding the experimental group (VR) the highest means are: "I think the movie was aesthetically appealing" and "I think the movie was original". On the other hand, in the movie *Is Anna Ok?*, the items "I think the movie was original" and "I think the movie was authentic" were the items with the highest means both in 2D and VR.

Table 5.4 Brand Coolness items analysis

Items	2D				VR			
	Crow: The Legend		*Is Anna Ok?*		*Crow: The Legend*		*Is Anna Ok?*	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
I think the movie was extraordinary.	5.26	1.124	3.38	1.454	5.73	1.407	4.90	1.348
I think the movie was energetic.	5.30	1.331	3.25	1.295	5.68	.973	4.20	1.472
I think the movie was aesthetically appealing.	**6.00**	1.011	3.44	1.390	**6.46**	.691	5.27	1.337
I think the movie was original.	5.26	1.527	**4.53**	1.367	**5.97**	1.323	**5.43**	1.501
I think the movie was authentic.	5.28	1.328	**4.91**	.995	5.92	1.211	**5.57**	.935
I think the movie was rebellious.	3.80	1.628	3.16	1.247	3.84	1.675	3.37	1.474
I think the movie was of high status.	4.57	1.424	2.94	1.294	4.62	1.299	4.23	1.569
I think the movie has the potential to be popular.	**5.52**	1.278	3.09	1.489	5.57	1.501	4.40	1.522
I think the movie appeals to subcultures.	4.46	1.545	2.78	1.211	5.05	1.452	4.50	1.480
I think the movie has the potential to be iconic.	4.46	1.580	2.63	1.264	5.00	1.394	3.70	1.489
Considering your overall experience, how cool would you perceive it?	5.63	1.082	3.44	1.045	6.38	.721	5.80	1.243

Source: own elaboration based on SPSS outputs.

In addition to the items presented in Table 5.4, which were measured on a Likert scale, the questionnaires also included a multiple option question to contribute to the understanding of how participants perceive coolness in movies. The question is "After experiencing the movie, how cool would you consider?" and the respondents could select one of the following answers: "I think the movie was cool"; "I think the movie was neither cool or uncool"; "I think the movie was uncool". As we can observe in Table 5.5, while the movie *Crow: The Legend* has approximately the same percentage (97%) in both formats (2D and VR) regarding the option "I think the movie was cool", the same does not occur with the documentary. Considering the movie *Is Anna Ok?* we can observe an increase of 62% in the same option from 2D (25%) to VR (86.7%).

Table 5.5 Brand Coolness multiple choice analysis

Q5: After experiencing the movie, how cool would you consider?	2D				VR			
	Crow: The Legend		*Is Anna Ok?*		*Crow: The Legend*		*Is Anna Ok?*	
	Count	%	Count	%	Count	%	Count	%
I think the movie was <u>cool</u>.	44	96.7	8	**25**	36	97.2	26	**86.7**
I think the movie was <u>neither cool nor uncool</u>.	2	4.3	18	56.2	1	2.3	4	13.3
I think the movie was <u>uncool</u>.	0	0	6	18.8	0	0	0	0
Total no. of respondents	46	100	32	100	37	100	30	100

Source: own elaboration based on SPSS outputs.

5.1.3 Sympathy and Empathy

As Escalas and Stern (2003) explain, sympathy is when a person is aware of another person's feelings without being absorbed in them.

On the other hand, empathy is an emotional response that occurs when someone is indeed absorbed in another person's feelings, being, therefore, a stronger emotional reaction than sympathy (Rooij, 2019). Even though both concepts are emotional responses to a stimulus, it is important to categorize them differently. As previously mentioned, the items used to study sympathy and empathy in both movies of this research were adapted from a scale developed Escalas and Stern (2003) and measured in a 7-point Likert Scale (1- strongly disagree; 7- strongly agree).

Sympathy

In the control group (2D), and considering the movie *Crow: The Legend*, the sympathy item, "Based on what was happening in the movie, I understood what the characters were feeling." is the one that presents a higher mean (Mean 6.33 and Standard Deviation 0.871). Furthermore, in the movie *Is Anna Ok?* the sympathy item with higher mean is "I was able to recognize the problems that the characters in the movie had." (Mean 5.50 and Standard Deviation 1.218).

In the experimental group (VR), the higher mean regarding sympathy and the movie *Crow: The Legend* is "I was able to recognize the problems that the characters in the movie had." (Mean

6.46 and Standard Deviation 0.836). Regarding the movie *Is Anna Ok?* in the VR group, the sympathy item with the highest mean is the same as in the movie *Crow: The Legend*, but with a mean of 5.27 (and 0.937 Standard Deviation).

As we can observe in Table 5.6, in the movie *Crow: The Legend*, the sympathy responses are similar in both 2D and VR, and in the movie *Is Anna Ok?* the mean even decreases slightly in VR when compared with the 2D group. Overall, regarding sympathy responses, the highest mean achieved was in the movie *Crow: The Legend*, experienced in VR.

Table 5.6 Sympathy items analysis

	Items	2D				VR			
		Crow: The Legend		*Is Anna Ok?*		*Crow: The Legend*		*Is Anna Ok?*	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Sympathy	Based on what was happening in the movie, I understood what the characters were feeling.	6.33	.871	5.25	.842	6.41	.896	4.90	.944
	Based on what was happening in the movie, I understood what was bothering the characters.	6.04	1.192	5.44	1.076	6.43	1.042	4.20	1.074
	I was able to recognize the problems that the characters in the movie had.	6.17	1.060	**5.50**	1.218	**6.46**	.836	**5.27**	.937

Source: own elaboration based on SPSS outputs.

Empathy

The empathy item with highest mean in the 2D group is "While watching the movie I felt as though I was one of the characters." for both movies (a mean of 3.85 with a standard deviation 1.776 for *Crow: The Legend* and a mean 2.88 with a standard deviation 1.476 for the movie *Is Anna Ok?*).

Even though in the VR group this item ("While watching the movie I felt as though I was one of the characters.") remains the one with the highest mean for the movie *Crow: The Legend*, in the documentary the item with highest mean in VR is "While watching the movie I felt has though the events in the movie were happening to me." (Mean 5.57 and Standard Deviation 1.840).

However, regarding empathy responses, Table 5.7 informs us that both movies (animation and documentary) presented higher means in VR than the same movies in 2D.

Table 5.7 Empathy items analysis

| | Items | 2D | | | | VR | | | |
| | | *Crow: The Legend* | | *Is Anna Ok?* | | *Crow: The Legend* | | *Is Anna Ok?* | |
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Empathy	While watching the movie I felt as though I was one of the characters.	**3.85**	1.776	**2.88**	1.476	**5.86**	1.378	5.43	1.697
	While watching the movie I felt has though the events in the movie were happening to me.	3.50	1.574	2.41	1.214	5.68	1.226	**5.57**	1.840
	While watching the movie, I felt as if the characters' feelings were my own.	3.65	1.636	2.28	1.250	5.14	1.378	3.37	1.749

Source: own elaboration based on SPSS outputs.

5.1.4 Word-of-Mouth

According to literature, positive WOM is a brand attitude that in the motion picture industry can play a major role regarding moviegoers' consumption decisions due to its powerful influential force (Yoon, Polpanumas and Park, 2017; Craig, Greene and Versaci, 2015).

As we can observe in Table 5.8 in both formats (2D and VR) and movies (animation and documentary) respondents were more willing to recommend than to talk about the movie they have watched. Moreover, willingness to talk about and to recommend is more positive in the experimental group (VR) than in the control group (2D). The increase in the mean is especially noticeable regarding the movie *Is Anna Ok?*.

Table 5.8 WOM items analysis

Items	2D				VR			
	Crow: The Legend		*Is Anna Ok?*		*Crow: The Legend*		*Is Anna Ok?*	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
I will talk to other people about this movie.	4.50	1.735	2.38	.942	5.84	1.344	5.87	1.456
I will recommend this movie to other people.	4.65	1.689	2.44	1.162	5.95	1.177	5.37	1.564

Source: own elaboration based on SPSS outputs.

5.1.5 Reliability, internal consistency and adequacy

The present research considers four main dimensions: brand coolness, sympathy, empathy and word-of-mouth. These constructs were divided into their respective items according to existent scales on literature and adapted to the current study.

The *Score_Coolness* construct represents a new variable, which was obtained by the computed mean of each of the ten items corresponding to Brand Coolness. As we can observe in table 14, the item "I think the movie was authentic" is the one with the highest mean value (5.42) in the construct. Contrarily, "I think the movie was rebellious" has the lowest mean (3.58). Further, the item "I think the movie has the potential to be popular" has the highest standard deviation (1.736) representing, therefore, the item with the greatest variability of response.

A new variable was also acquired for the sympathy dimension. The *Score_Sympathy* variable was obtained by the computed mean of the three items referring to sympathy. The means in this dimension are fairly similar, being the highest value (6.09) the item "I was able to recognize the problems that the characters in the movie had." and the lowest value (6.03) the item "Based on what was happening in the movie, I understood what was bothering the characters.". This last item is also the one with the highest standard deviation value (1.148).

Regarding the new variable *Score_Empathy*, which was obtained by the computed mean of the three items referring to the empathy dimension, the mean (4.20) is lower than in the sympathy dimension. The item with the highest value (4.48) is "While watching the movie I felt as though I

was one of the characters.". This is also the item with the greatest variability of response (SD=1.976). On the other hand, the item referring to empathy with the lowest mean (3.99) is "While watching the movie, I felt as if the characters' feelings were my own.".

The *Score_WOM* also represents a new variable obtained by the computed mean of the items referring to the dependent word-of-mouth (WOM). In this dimension, the first item, which considers the willingness to talk about the movies, has a slightly higher score (4.66) than the willingness to recommend it (4.64). Although both items have a mean and standard deviation with fairly similar values.

Considering the Cronbach's Alpha test, which measures reliability and the internal consistency between items on a scale, the first three dimensions (brand coolness, sympathy, and empathy) presented values higher than 0.700, which reflects good reliability, and the last dimension, WOM (with only two items), indicates a Pearson Correlation of r=.911, being, therefore, significant. Moreover, Table 5.9 also presents the mean and Standard Deviation (SD) of each item within its scale.

Before conducting the factor analysis, it is important to consider the adequacy of the variables through a Kaiser-Meyer-Olkin (KMO) and a Bartlett's test. To the brand coolness dimension, considering its KMO value of 0.924, its recommendation on a factor analysis is meritorious. Regarding sympathy (with a KMO value of 0.738) and empathy (with a KMO value of 0.754), the recommendation to perform the factor analysis is considered to be middling. Further, in the WOM dimension, the recommendation to conduct the factor analysis is mediocre, since its KMO value (0.500) it's less than 0.600.

Nonetheless, the adequacy of performing the factor analysis is also proven by conducting a Bartlett's test. Considering this test, all the dimensions presented a Sig=0.000, meaning that the variables are significantly correlated and, therefore, the null hypotheses (that the initial variables are not correlated) must be rejected. The KMO and the Bartlett's tests are summarized with the respective SPSS outputs in Annex C.

Table 5.9 Dimensions scales, means and reliability

Dimensions	Means	SD
BRAND COOLNESS (α=.921)		
Score_Coolness	**4.65**	**1.192**
I think the movie was extraordinary.	4.89	1.564
I think the movie was energetic.	4.72	1.571
I think the movie was aesthetically appealing.	5.40	1.574
I think the movie was original.	5.32	1.508
I think the movie was authentic.	5.42	1.200
I think the movie was rebellious.	3.58	1.544
I think the movie was of high status.	4.15	1.534
I think the movie has the potential to be popular.	4.77	1.736
I think the movie appeals to subcultures.	4.25	1.644
I think the movie has the potential to be iconic.	3.97	1.664
SYMPATHY (α=.883)		
Score_Sympathy	**6.06**	**.961**
Based on what was happening in the movie, I understood what the characters were feeling.	6.06	.984
Based on what was happening in the movie, I understood what was bothering the characters.	6.03	1.148
I was able to recognize the problems that the characters in the movie had.	6.09	1.067
EMPATHY (α=.937)		
Score_Empathy	**4.20**	**1.815**
While watching the movie I felt as though I was one of the characters.	4.48	1.976
While watching the movie I felt has though the events in the movie were happening to me.	4.16	1.942
While watching the movie, I felt as if the characters' feelings were my own.	3.99	1.860

Dimensions	Means	SD
WOM (r=.911)		
Score_WOM	**4.65**	**1.891**
I will talk to other people about this movie.	4.66	1.959
I will recommend this movie to other people.	4.64	1.910

Source: own elaboration based on SPSS outputs.

5.2 Hypotheses Analysis

5.2.1 Hypothesis 1

H1a: Characteristics of brand coolness in movies vary with the Format.

To test the proposed hypothesis, an independent sample t-test was conducted. This analysis allows us to understand whether the means difference between two groups (2D and VR) are significantly different (Hair, et al., 2016).

Before performing the mentioned statistical technique, it is important to consider the equality of variances through the Levene's test, and also the t-test, which indicates the equality of means in the two independent samples (please see annex D.1).

Considering the statistical analysis' outputs (please see annex D.1), the characteristic "Rebellious" from the Brand Coolness Scale (Warren et al., 2019), is the only characteristic in which we accept the null hypothesis, meaning both populations (2D and VR) perceive it the same way. In fact, as we can observe in Figure X, both lines seem to be very close to the same mean score (2D = 3.54; VR= 3.63).

Nonetheless, the remaining nine characteristics (extraordinary, energetic, aesthetically appealing, original, authentic, high status, popular, subcultural and iconic) have a significant difference (Sig. 2-tailed < 0.05), which indicates that the mean obtained is different between groups. As we can observe through the Group Statistics (please see annex D.2), the mean of the items is higher for participants who have watched the movies in VR than those who have watched them in 2D.
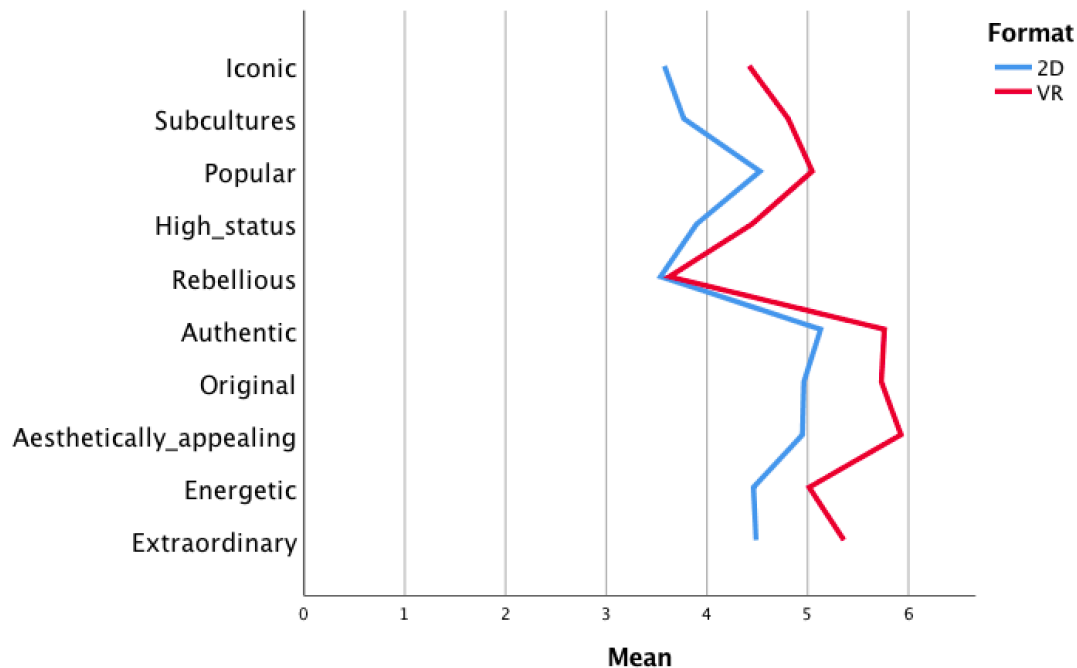
Figure 5.1 Brand coolness characteristics according to the Format

(Source: SPSS output)

H1b: Characteristics of brand coolness are not the same for different movies.

Hypothesis 1b) intends to understand how brand coolness characteristics may differ according to different movies.

After considering the equality of variances (Levene's test) and the equality of means (t-test) in the two independent samples (please see annex D.3), we can interpret the results of the statistical technique.

Based on statistical analysis (independent samples t-tests) we are able to conclude that except for the characteristic "Authentic" from the Brand Coolness Scale (Warren et al., 2019) the average coolness characteristics are not perceived by the population in the same way for the documentary movie *Is Anna Ok?* and the animation movie *Crow: The Legend* (please see annex D.3). More precisely, considering the item "I think the movie is authentic." we accept the null hypothesis and conclude that both movies are perceived similarly regarding the trait of authenticity. In fact, as we can observe in the Group Statistics Table (please see annex D.4), the mean regarding "authentic" for the documentary is 5.23 and for the animation movie is 5.57.

However, regarding the other nine traits (extraordinary, energetic, aesthetically appealing, original, rebellious, high status, popular, subcultural and iconic) from the Brand Coolness Scale (Warren et al., 2019), we can reject the null hypothesis and conclude that the average perception of brand coolness characteristics is not the same for both movies. Further, the Group Statistics Table (please see annex D.4) inform us that in all the items the mean is higher in the movie *Crow: The Legend* than in *Is Anna Ok?*.
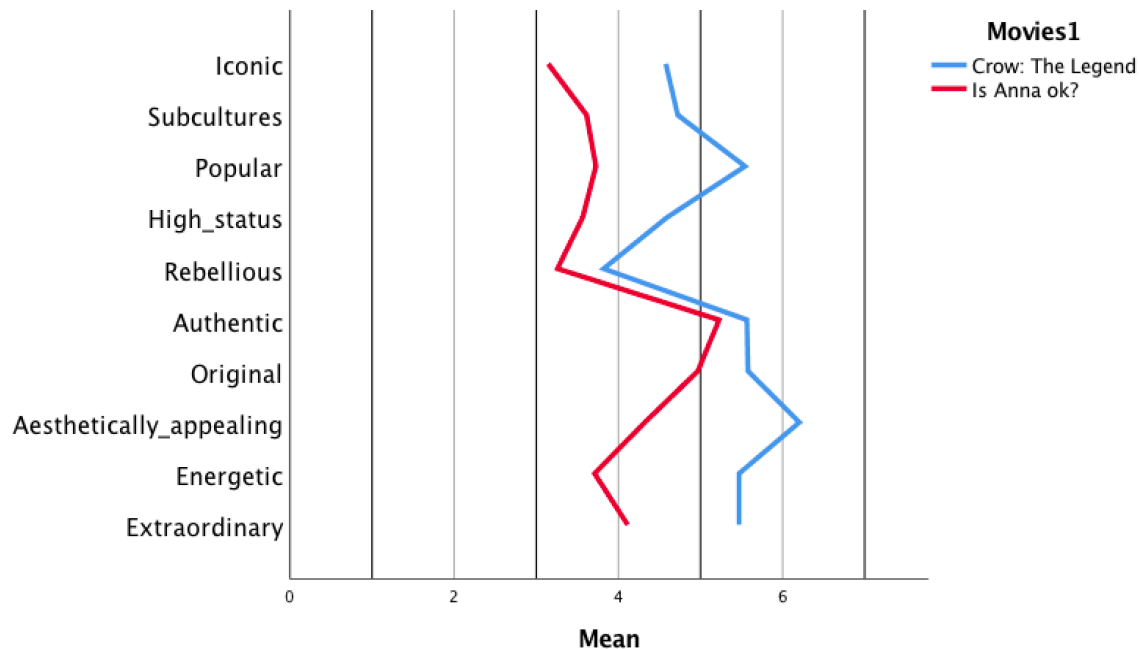
Figure 5.2 Brand coolness characteristics according to the Movie

(Source: SPSS output)

5.2.2 Hypothesis 2

H2a: The technological format (2D and VR) and the movie (documentary and animation) have a significant effect on brand coolness.

Considering Brand Coolness, we can first observe the descriptive statistics (please see annex D.8), which provides the mean and standard deviation of the categories within the independent groups. The descriptive show us that regarding brand coolness, the movie *Crow: The Legend* in VR has the highest mean (5.38). Contrarily, the interaction with the lowest mean (3.41) is *Is Anna*

Ok? in 2D. Further, in the plot of the results (Figure 5.3) it is possible to observe that both lines are non-parallel which indicates at least some interaction effect. Considering the plot, we can already observe how both movies had higher means on brand coolness when presented in VR than in 2D. Nonetheless, the difference is greater in the movie *Is Anna Ok?* (4.56 – 3.41= 1.15) than in *Crow: The Legend* (5.38 – 4.97= 0.41).
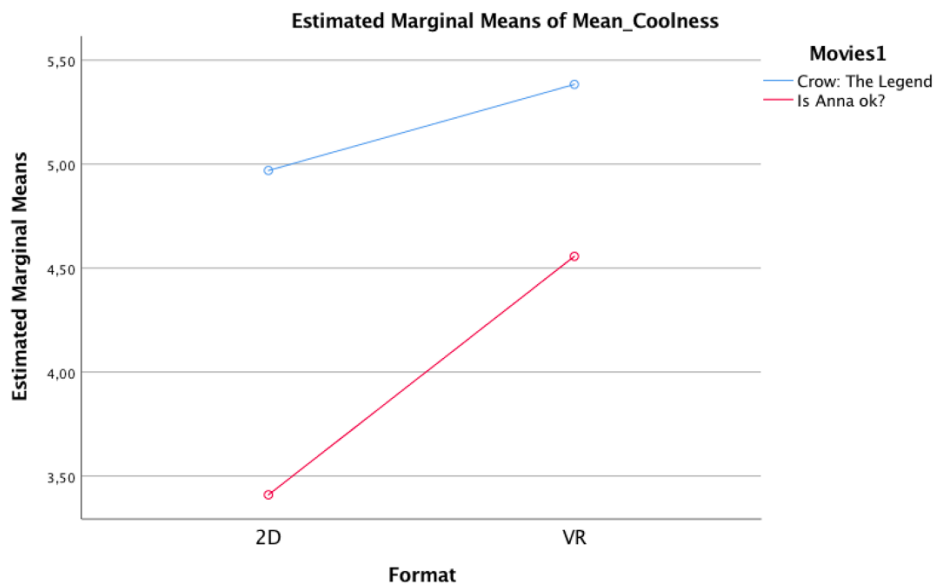
Figure 5.3 Two-Way ANOVA analysis on Brand Coolness
(Source: SPSS output)

The results can be shown more precisely in the Tests of Between-Subjects Effects. By looking at the "Format" row in Table 5.10, we can see that we have a statistically significant interaction at the p = .000 (<0.05) on brand coolness. Similarly, the "Movie" row also indicates a significant interaction (p = .000). However, it's the row Format*Movie that informs us that the independent variables and their interaction have a significant effect (p = .025) on our dependent variable brand coolness. Moreover, the column Partial Eta Squared allows us to measure that effect and it indicates that 3.5% of the between-subjects variance is accounted for by the interaction of Format and Movie. It also allows us to observe that the effect on brand coolness is higher for the independent Movie (27.8%) than it is for the Format (14.2%).

Table 5.10 Tests of Between-Subjects Effects for Brand Coolness

Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	74.131	3	24.710	26.701	.000	.362
Format	21.511	1	21.511	23.244	.000	.142
Movies	50.280	1	50.280	54.331	.000	.278
Format*Movies	4.741	1	4.741	5.123	.025	.035
Error	130.489	141	.925			
Total	3333.840	145				
Corrected Total	204.620	144				

Source: Own elaboration based on SPSS outputs.

Even though the Tests of Between-Subjects Effects allow us to confirm that a significant difference exists, by looking at the pairwise comparisons we can determine which group (2 × 2 = 4) differences are statistically significant on brand coolness. As we can observe (please see annex D.8), there is a statistically different in all the levels of the independent variables.

5.2.3 Hypothesis 3

H3: The technological format (2D and VR) and the movie (documentary and animation) have a significant effect on sympathy.

As we can observe in the descriptive statistics regarding sympathy as the dependent variable (please see annex D.9), *Crow: The Legend* × VR has the highest mean (6.43) and *Is Anna Ok?* × 2D has the lowest (5.40). The lines presented in the plot of the results are non-parallel, which indicates interaction. Even though both movies have higher sympathy means in VR than in 2D, the line is steeper in *Is Anna Ok?* and the difference is more significant (6.11 – 5.40 = 0.71) than in the *Crow: The Legend* (6.43 – 6.12= 0.31).

Figure 5.4 Two-Way ANOVA analysis on Sympathy

(Source: SPSS output)

Considering the Tests of Between-Subjects Effects Table (Table 5.11), as we can observe, according to the row Format*Movie we accept the null hypothesis and conclude that the independent variables and their interaction do not have a significant effect ($p = 0.126 > 0.05$) on sympathy.

However, considering the Format row there is a statistically significant difference ($p = 0.02 < 0.05$), meaning that Format has a significant effect on the dependent sympathy. The same occurs with the independent Movie, which has even a greater significance than Format with a value of $p = 0.00$. Considering the Partial Eta Squared column, the Movie row shows a value of 0.087, meaning that 8.7% of the variance in sympathy can be attributed to the movie. On the other hand, a lower percentage of 6.8% of the variance in the dependent can be credited for the Format variable.

Table 5.11 Tests of Between-Subjects Effects for Sympathy

Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	20.001	3	6.667	8.305	.000	.150
Format	8.242	1	8.242	10.267	.002	.068
Movies	10.804	1	10.804	13.459	.000	.087
Format*Movies	1.899	1	1.899	2.366	.126	.017
Error	113.187	141	.803			
Total	5453.667	145				
Corrected Total	133.188	144				

Source: Own elaboration based on SPSS outputs.

5.2.4 Hypothesis 4

H4: The technological format (2D and VR) and the movie (documentary and animation) have a significant effect on empathy.

Considering the descriptive statistics of the construct empathy, we can observe (please see annex D.10), that *Crow: The Legend* in VR has the highest mean (5.56) and *Is Anna Ok?* in 2D has the lowest (2.52). By looking at the plot of the results we can see that the lines are non-parallel, which indicates at least some interaction. Moreover, both lines are steep, which shows that there there's a significant increase of empathy in both movies from 2D to VR. In fact, the difference in the means from 2D to VR in the movie *Crow: The Legend* is 1.89 (5.56 – 3.67 = 1.89) and in the movie *Is Anna Ok?* is 2.66 (5.18 – 2.52 = 2.66).
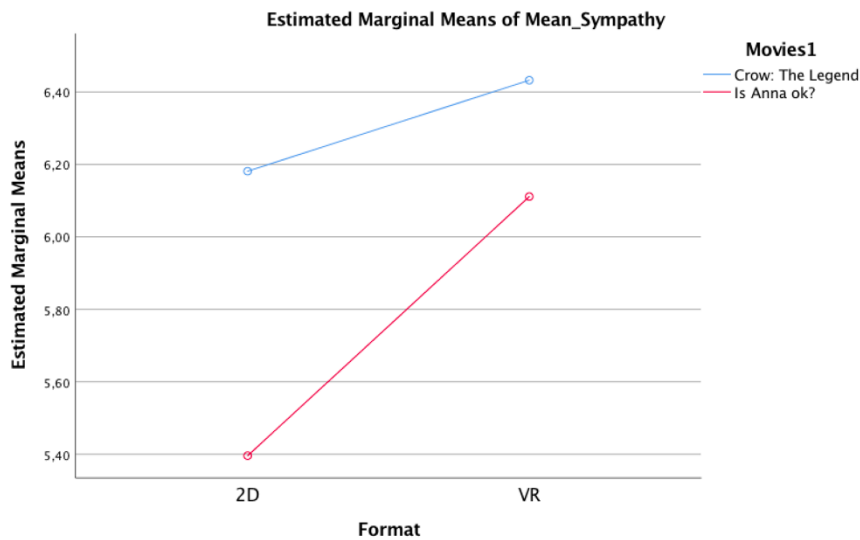
Figure 5.5 Two-Way ANOVA analysis on Empathy

(Source: SPSS output)

Regarding the Tests of Between-Subjects Effects Table (Table 5.12), the Format row shows indeed a value of $p = 0.000$, which means that the independent variable Format has a significant effect on empathy. In fact, according to the Partial Eta Squared column, 40% of the variance in empathy can be attributed to the Format. The independent Movie also presents a significant effect ($p = 0.01$) on the dependent, however, the Partial Eta Squared indicates a lower percentage than the Format, more precisely it shows that 7% of the variance in empathy is caused by the Movie. Nonetheless, as we can observe by looking at the row Format*Movie, we accept the null hypothesis, which means that the interaction of the independent variables does not have a significant effect ($p = 0.105 > 0.05$) and, therefore, the variance on empathy cannot be explained by the interaction between Format and Movie.

Table 5.12 Tests of Between-Subjects Effects for Empathy

Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	200.271	3	66.757	34.333	.000	.422
Format	182.550	1	182.550	93.885	.000	.400
Movies	20.561	1	20.561	10.574	.001	.070
Format*Movies	5.164	1	5.164	2.656	.105	.018
Error	274.161	141	1.944			
Total	3043.444	145				
Corrected Total	474.432	144				

Source: Own elaboration based on SPSS outputs.

5.2.5 Hypothesis 5

H5: The technological format (2D and VR) and the movie (documentary and animation) have a significant effect on WOM.

The descriptive statistics (please see annex D.11) inform us that the movie *Crow: The Legend* in VR had the highest mean (5.89) regarding word-of-mouth and *Is Anna Ok?* in 2D the lowest (2.41). Considering the plot of results, the lines are non-parallel, which indicates at least some interaction. Similar to the previous analysis, the means in VR seem to increase for both movies. The movie *Is Anna Ok?* has the most significant increase with a difference of 3.21 (5.62 – 2.42= 3.21). In the movie *Crow: The Legend*, the difference in the means from 2D to VR is 1.31 (5.89 – 4.57= 1.31).
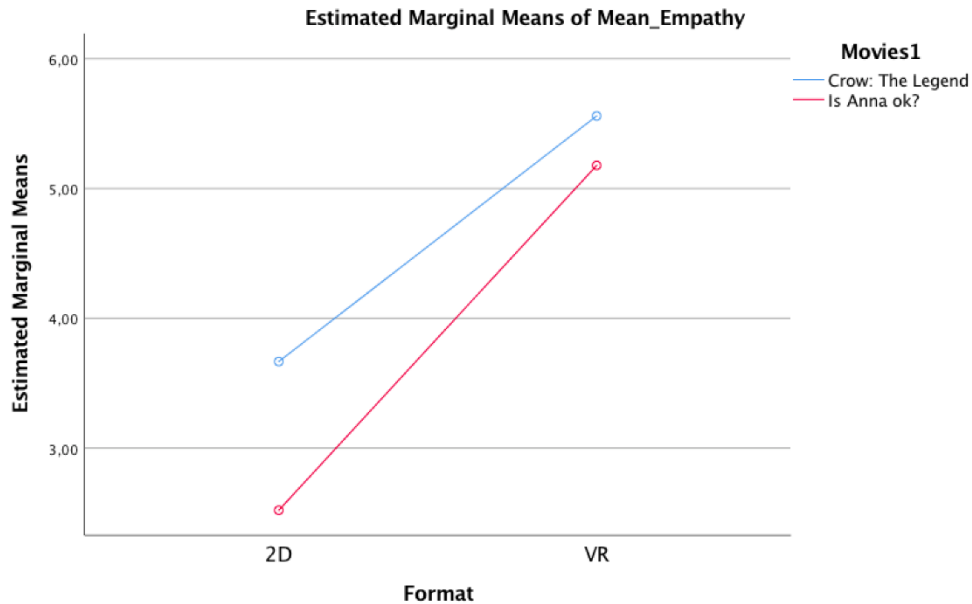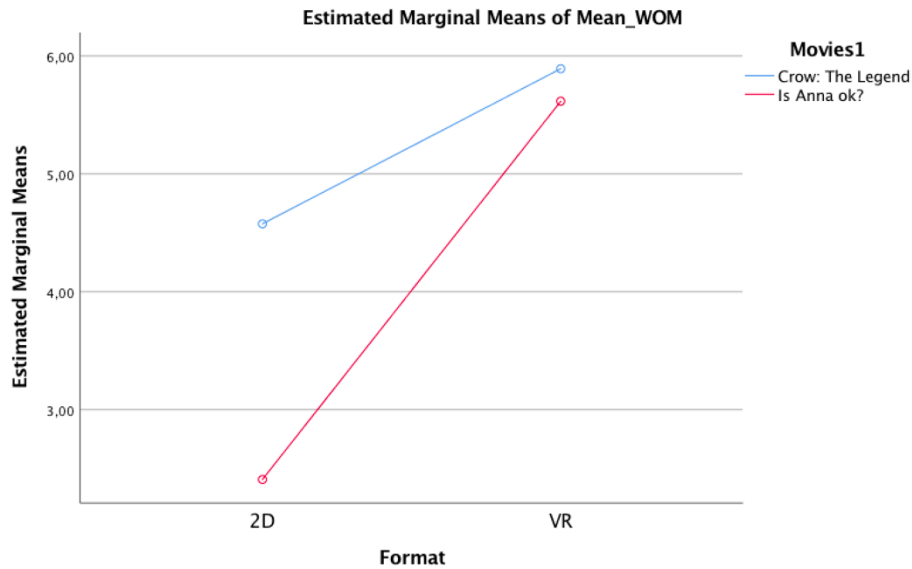
Figure 5.6 Two-Way ANOVA analysis on WOM
(Source: SPSS output)

Considering the Tests of Between-Subjects Effects Table (Table 5.13), the Format*Movie row indicates that the variance on WOM can be explained by the interaction between Format and Movie. Thus, we reject the null hypothesis and conclude that the interaction of the independent variables has a significant effect ($p = 0.000$). According to the Partial Eta column, 10.5% of the variance in WOM can be attributed to the interaction between Format and Movie. Moreover, the Movie row also informs us that the independent variable has a significant effect ($p = 0.000$) on WOM, explaining 16.4% of its variance according to the Partial Eta Squared column. Further, the Format row indicates that the technological format in which the movie is presented also has a significant effect ($p = 0.000$) on the dependent. In fact, as we can observe in the Partial Eta Squared, 40.2% of the variance in WOM can be caused by the format.

Table 5.13 Tests of Between-Subjects Effects for WOM

Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	246.450	3	82.150	43.122	.000	.478
Format	180.739	1	180.739	94.874	.000	.402
Movies	52.742	1	52.742	27.686	.000	.164
Format*Movies	31.668	1	31.668	16.623	.000	.105
Error	268.612	141	1.905			
Total	3648.000	145				
Corrected Total	515.062	144				

Source: Own elaboration based on SPSS outputs.

5.2.6 Non-parametric Test of the Hypotheses 2, 3, 4 and 5

A non-parametric test was conducted in order to understand how the independent variables (format and movie) have an impact on the dependent variables, considering that the violated assumptions of the two-way ANOVA analysis can be a limit to the interpretation of the results.

In order to perform the Mann-Whitney test the data was first split according to the format (2D and VR). Afterwards, the conducted analysis considered the two groups (animation and documentary) of the independent variable Movie on the dependents brand coolness, sympathy, empathy and WOM. As we can observe in Table 5.14, the null hypothesis (the distribution of the dependent variables in the 2D group is the same for the two movies) is rejected in the four dependent variables (Sig. < 0.05). Therefore, we can conclude that the brand coolness perceptions, the sympathy and empathy responses and the WOM are different for the two movies (*Crow: The Legend* and *Is Anna Ok?*) in the 2D group. Further, considering the sample mean ranks, there is evidence that participants who have watched the animation movie (*Crow: The Legend*) have larger values on the four dependent variables.

In the VR group the null hypothesis is rejected in the dependents Brand Coolness (Sig.= .001) and Sympathy (Sig.=.047), which means that there are significant differences in the two populations (animation and documentary). As we can see in Table 5.14, the mean rank is again higher in the animation movie. Therefore, *Crow: The Legend* is cooler than *Is Anna Ok?* and the sympathy responses are also significantly higher. However, regarding the dependent empathy (Sig.=.573), we accept the null hypothesis and conclude that there is no significant difference between both movies in the VR group. Furthermore, we also accept the null hypothesis considering the dependent WOM (Sig.= .504), meaning that in the VR group there is no difference regarding participants' willingness to talk about and recommend both movies.

Table 5.14 Mann-Whitney Test for the independent Movie in the 2D and VR group

	Movie	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)
2D Group				
Brand Coolness	Crow: The Legend	51.01	206.500	.000
	Is Anna OK?	22.95		
Sympathy	Crow: The Legend	46.74	403.000	.001
	Is Anna OK?	29.09		
Empathy	Crow: The Legend	46.61	409.000	.001
	Is Anna OK?	29.28		
WOM	Crow: The Legend	50.96	209.000	.000
	Is Anna OK?	23.03		
VR Group				
Brand Coolness	Crow: The Legend	41.32	284.000	.001
	Is Anna OK?	24.97		
Sympathy	Crow: The Legend	38.12	402.500	.047
	Is Anna OK?	28.92		
Empathy	Crow: The Legend	35.20	510.500	.573
	Is Anna OK?	32.52		
WOM	Crow: The Legend	35.41	503.000	.504
	Is Anna Ok?	32.27		

Source: Own elaboration based on SPSS outputs.

A second Mann-Whitney test was conducted in which the data was split according to the two movies used in the present research. Thus, this second test considers the two groups of the

independent variable Format (2D and VR) and the same four dependent variables assessed in the previous analyses (brand coolness, sympathy, empathy and WOM).

As we can see in Table 5.15, there is a significant difference (Sig. < 0.05) between the two populations (2D and VR) regarding the variables brand coolness, empathy and WOM in the animation (*Crow: The Legend*) group. In fact, considering the mean ranks of the movie *Crow: The Legend*, the values are significantly higher in these variables for the respondents that experienced this movie in VR than for the participants that watched it in 2D. However, there is an exception to the variable sympathy in the group that watched *Crow: The Legend*. Even though the mean rank is also slightly higher in VR than in 2D, the difference regarding sympathy responses is not considered significant.

In the documentary (*Is Anna Ok?*) group the null hypothesis (the distribution of the dependent variables in the documentary group is the same for the two formats) is rejected in all the four variables (brand coolness, Sig.= .000; sympathy, Sig.=001; empathy, Sig.=.000, WOM, Sig.=.000). Therefore, the values are significantly different between formats (2D and VR). Moreover, as we can see in the Mean Rank column, the values in the dependent variable empathy and WOM are more than double in VR than in 2D for the same movie. Regarding brand coolness perceptions there is also a high increase (of 18.08) from 2D to VR. The sympathy variable is once again the one with less difference compared with other dependents, nonetheless, also presents a clear increase from 2D to VR in the documentary movie.

Table 5.15 Mann-Whitney Test for the independent Format in the animation and documentary group

	Format	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)
Crow: The Legend				
Brand Coolness	2D	37.04	623.000	.037
	VR	48.16		
Sympathy	2D	39.21	722.500	.212
	VR	45.47		
Empathy	2D	28.86	246.500	.000
	VR	58.34		
WOM	2D	33.21	446.500	.000
	VR	52.93		
Is Anna Ok?				
Brand Coolness	2D	22.75	200.000	.000
	VR	40.83		
Sympathy	2D	24.44	254.000	.001
	VR	39.03		
Empathy	2D	19.80	105.500	.000
	VR	43.98		
WOM	2D	18.14	52.500	.000
	VR	45.75	200.000	.000

Source: Own elaboration based on SPSS outputs.

5.2.7 Hypothesis 6

H6a: Movies' coolness perceptions influence WOM.
H6b: Empathy responses to movies influence WOM.

This section intends to understand how brand coolness (independent variable) perceptions of movies and empathy responses (independent variable) influence WOM (dependent variable). In order to do so, a multiple regression analysis was conducted.

To analyze the errors, it is first necessary to verify the assumptions. The normal distribution of errors is verified by the Histogram and by the Normal Probability Plot (see annex D.12). The Durbin-Watson test was performed and exhibits a value of 1.461, indicating non-autocorrelation in the sample. Regarding the collinearity statistics VIF= 1.537 (<10), thus the explanatory variables

do not present correlation problems. Further, considering the Residuals statistics (please see annex D.12), the mean of the residuals is zero.

Once the assumptions to proceed with a linear regression analysis are validated it is possible to proceed to the main results obtained. As we can observe through the R Square, 68.8% of the variation of WOM is explained by the independent variables (brand coolness and empathy) included in the model. Considering the t tests to coefficients, we can reject the null hypothesis in the case of the constant term (Sig.= 0.008) as well as for the remaining explanatory variables of brand coolness (Sig.= .000) and empathy (Sig.=.000), and conclude that these two explanatory variables are useful to explain the dependent WOM and should, therefore, be kept in the model. Moreover, the Standardized Beta Coefficients allow us to compare how each independent variable affects the dependent. As we can observe, brand coolness (0.531) is more important to explain WOM than empathy (0.390), since it has the largest standardized Beta coefficient in absolute value. In fact, regarding the Unstandardized coefficients β a unit increase in brand coolness perceptions leads to an increase of 0.843 in the word-of-mouth score, while in empathy it only leads to an increase of 0.407. In other words, the higher the levels of empathy responses and brand coolness perceptions, the more positive are the levels of WOM.

Through the ANOVA analysis, it is also possible to observe in Table 5.16 that the F-Fisher test has a value $p=.000$, meaning that the null hypothesis must be rejected (dependent and independent variables are not correlated) and therefore, we can conclude that the variables are significantly correlated.

Table 5.16 Multiple Linear Regression for WOM

Model	t	Sig.	R Square	Unstandardized coefficients B	Standardized Beta coefficient	ANOVA
Constant	-2.712	.008		-.980		
Brand Coolness	9.026	.000	.680	.843	.531	.000
Empathy	6.631	.000		.407	.390	

Source: Own elaboration based on SPSS outputs.

5.2.8 Hypothesis 7

H7: Empathy responses to movies influence brand coolness perceptions.

In order to understand if empathy responses to movies have an impact on brand coolness perceptions, a simple linear regression analysis was performed.

Before interpreting the results, it is first important to consider the assumptions. The normal distribution of errors is verified by the Histogram and by the Normal Probability Plot (please see annex D.13). There is non-autocorrelation in the sample, considering that the Durbin-Watson indicates a value of 1.436. Moreover, concerning the Residuals statistics (please see annex D.13), the mean of the residuals is zero.

After validating the assumptions of this analysis, we can consider the main results obtained. As we can observe in Table 5.17, the Sig. of the t-test is lower than 5% (Sig.=0.00), which suggests that empathy responses are an important explanatory variable of brand coolness perceptions of movies. Further, the unstandardized B coefficient is positive (3.012), meaning that participants with higher levels of empathy responses to movies have more positive levels of brand coolness perceptions to movies than those with lower levels of empathy for the respective movies. With a value of 0.349, the R Square demonstrates that 34.9% of the variability of brand coolness is explained by the independent variable (empathy).

Considering the ANOVA analysis, we can observe that the F-Fisher test presents a *p-value* = 0.000, indicating that the variables empathy and brand coolness are significantly correlated.

Table 5.17 Simple Linear Regression for Brand Coolness

Model	t	Sig.	R Square	Unstandardized coefficients B	Standardized Beta coefficient	ANOVA
Constant	14.839	.000	.349	3.012		.000
Empathy	8.760	.000		.388	.591	

Source: Own elaboration based on SPSS outputs.

6. Conclusions and Implications

6.1 Findings Overview

The present dissertation was conducted with the intention of providing insights on the application of virtual reality in the motion picture industry, considering the constructs of brand coolness, empathy, sympathy, and WOM. Thus, literature regarding the benefits of virtual environments on the management and marketing field was considered (Tussyadiah, et al. 2018; Alcañiz, Bigné, & Guixeres, 2019; Farah, Ramadan, & Harb, 2019; Shin, 2018; Hudson, et al., 2019; Grudzewski, et al., 2018; Barnes, Mattson & Hartley, 2015; Cowan and Ketron, 2019; Farshid et al., 2018; Leung, Lyu & Bai, 2019). However, concerning the application of this device in the motion picture industry, it is also important to take into consideration the technological and synesthetic constrains the format still holds to these days (Mateer, 2017; Ding, Zhou & Fung, 2018; Ross, 2020).

According to Kerrigan (2018), the importance of a movie lays on its ability to tell a story, despite the technology used to do so. Thus, this study tries to demonstrate how brand coolness, emotional responses (empathy and sympathy), and word-of-mouth are affected by the format (2D and VR) while also considering the importance of the content itself, using, therefore, two different movie genres (animation and documentary).

From the conducted research and data collection, the responses of a total of 145 participants were examined. While 78 participants watched *Is Anna Ok?* (documentary) and *Crow: The Legend* (animation) in 2D screens; 67 respondents experienced the same movies in Virtual Reality. Both groups took part in the same questionnaire, which assessed the four main different constructs explored throughout the dissertation and could provide the results.

Considering the profile analysis first, each participant from either the 2D or VR group was asked to choose the movie genre according to their individual preferences. Considering Palomba (2020), there is a positive association between brand personality and movie genres. Further, regarding existent literature (Desai & Basuroy 2005; MacWhinney 2015; Gazley, Clark & Sinha 2011; Hennig-Thurau, Houston & Sridhar 2006), the genre can be an important determinant of the box office performance, and can influence the expected quality of a movie (Desai & Basuroy, 2005; Kent, 2015). Thus, the present study demonstrates a greater preference for the animation genre than

for the documentary in both technological formats, since in both formats there were more participants interested in *Crow: The Legend* than in *Is Anna Ok?*.

Moreover, being perceived as cool is considered a positive attribute (Warren et al., 2019), and as we can observe from the descriptive analysis, the animation movie had overall higher scores for coolness characteristics in both formats (2D and VR) than the documentary. However, the profile analysis further indicates that the increase from 2D to VR regarding coolness perceptions was much higher for the documentary movie than for the animation, which did not exhibit such significant differences between formats.

As Escalas and Stern (2003) and Rooij (2019) contend, empathy is a stronger emotional response than sympathy. Considering the profile analysis, sympathy had overall higher means than empathy in both formats (2D and VR) for the animation movie and for the documentary in 2D, which could indicate that participants had a higher understanding what the characters were feeling, but were possibly not as absorbed in their feelings. However, considering the subgroup of *Is Anna Ok?* in VR, empathy and sympathy responses had fairly similar scores.

Word-of-mouth can be a determinant factor regarding the success of a movie and its box office performance (Yoon, Polpanumas and Park, 2017; Craig, Greene and Versaci, 2015). Considering Shieh and Lai (2007, p. 59) definition of experience as an happening that "involves a personal occurrence with emotional significance created by an interaction with product or brand related stimuli", many firms have been investing and implementing virtual environments in order to provide experiences that enhance customer experience, customer satisfaction and sustain brand value (Fetscherin et al., 2008; Barnes, Mattson & Hartley, 2015). Further, according to Gupta, Pansari and Kumar (2018), experiences can indeed impact the consumers' satisfaction levels and emotions toward a brand, which can affect direct (purchases) and indirect (referrals, influence, and feedback) customer experiences. As we can see from the profile analysis, both the animation and the documentary movies had higher means in VR than in 2D for the two WOM items (willingness to talk about and willingness to recommend). Thus, it could indicate that experiences provided by virtual worlds can indeed lead to greater indirect customer experiences.

Regarding the analysis of Brand Coolness toward the animation and documentary movies presented in 2D and in VR, two independent sample t-tests were performed for hypothesis 1.

As Warren and colleagues (2019) argue, it is important to identify and enhance the cool characteristics a brand has in order to increase its coolness perceptions. Further, the cooler a brand

is considered the higher the chances of having positive consumers' attitudes (WOM and WTP) toward that brand. Thus, Warren et al. (2019) recommend managers to reinforce the lacking cool characteristics a seek ways to keep innovating. Considering the benefits of virtual reality in the management and marketing field according to existent literature, the present study intends to understand if, in the motion picture, the application of VR impacts the perceptions of coolness of a movie, and could consequently be a way for a fictional brand to enhance its coolness perceptions.

As we can observe through the statistical analysis, the characteristics of brand coolness indeed vary with the movie format. More precisely, when experienced in VR, the coolness perceptions of a movie seem to increase significantly more than the same movie in 2D. However, this observation was not confirmed for the characteristic "Rebellious", which presented similar results in both formats (2D and VR). Hence, *hypothesis 1a)* is partly supported. Moreover, regarding the importance of the content itself according to Kerrigan (2018), this study also considers it important to assess the differences between the content from both movies (animation and documentary). Indeed, the analysis reinforces the statements of Kerrigan (2018) and concludes that the characteristics of brand coolness also vary with the movie genre itself, which indicates the importance of the content despite the format. Nonetheless, this conclusion is not valid for the characteristic "Authentic", which does not present a significant difference between both movie stimuli, thus *hypothesis 1b)* is partly supported.

Additionally, this study intends to further understand how brand coolness, emotional responses (empathy and sympathy), and word-of-mouth are affected by the format (2D and VR) while also considering the importance of the content itself, and the interaction between these two independent variables. Hence, a two-way ANOVA was performed. Moreover, two Mann-Whitney Tests were also conducted in order to improve the interpretation of the results due to the violation of the two-Way ANOVA assumptions. In the first Mann-Whitney Test, the data was split into two groups according to the Format; and in the second Mann-Whitney Test, the data was split into two groups according to the Movie.

Considering the methodology used, brand coolness is significantly affected by the Format (2D and VR), the Movie (animation and documentary), and the interaction between Format and Movie. Hence, *hypothesis 2* is fully supported. Even though both movies have higher perceptions of coolness in virtual reality than in 2D, the analysis also allows us to understand that regarding coolness, the independent Movie is more important than the independent Format to explain the

variance on coolness perceptions. Considering the Mann-Whitney tests performed, it is also possible to observe that there's indeed a significant difference on brand coolness perceptions between movies and between formats.

Sympathy and empathy are both considered emotional responses, however, while sympathy is a more distanced feeling; empathy, on the other hand, results in stronger emotional reactions being, thus, considered crucial in movies to study the emotional relationship between the audience and the fictional characters (Rooij, 2019). The application of virtual reality to advertising can be imagery provoking and provide an emotionally engaging experience (Mooradian, Matzler & Szykman, 2008). In fact, Shin and Biocca (2017) argue that VR is positively associated with empathy and embodiment. Nonetheless, Shin (2018) also contends that despite the technological format in which the user experiences a story, it is additionally important to consider that greater empathy is also highly influenced by the users' own cognition and sense making processes (which are based on individual needs and preferences).

The present research concludes that indeed sympathy responses are significantly affected by the format (2D or VR) and the movie (animation or documentary), but not by the interaction between these two independent variables. Therefore, *hypothesis 3* is partly supported. Considering the statistical analysis performed, 8.7% of the variance in sympathy is attributed to the independent variable Movie, which is more than the Format (6.8%). Further, the Mann-Whitney tests inform us that there is a significant difference regarding sympathy responses according to the Movie in both 2D (Sig.= .001) and VR (Sig.= .047) groups. Further, the differences according to the Format are also significant in the documentary group (Sig.= .001), but not in the animation group (Sig.= .212).

Considering the dependent empathy, the methodology used allows us to conclude that the interaction between Movie and Format does not have a significant impact on empathy responses. However, both the Movie and the Format considered individually have an affect on the dependent. Hence, *hypothesis 4* is partly supported. Unlike the results on sympathy, the Format influences empathy responses more than the Movie, considering that 40% of the variance in empathy is attributed to the Format (2D or VR), and only 7% to the Movie. Thus, the present research is in accordance with Shin and Biocca (2017), considering the positive association between VR and empathy. Regarding the Mann-Whitney tests, we can observe that the independent Movie is significant in the 2D group (Sig.=.001) but does not present significant differences in the VR group

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(Sig.=.573). Moreover, considering the second test, the independent Format (2D or VR) shows significant differences in both movie groups, which have a Sig. value of 0.000.

In the motion picture industry, word-of-mouth is often considered by the audience a strong indicator of quality (Yon, Polpanumas and Park, 2017). Negative WOM can indeed doom the success of a movie, thus, studios are using several management and marketing strategies to reduce the financial risk (Craig, Greene & Versaci, 2015). Moreover, according to Ding, Zhou and Fung (2018), there has been a greater investment in VR techniques in the motion picture industry, especially to promote movies. Through the present study and respective methodology, it was possible to conclude that the interaction between Format and Movie has a significant impact on WOM, explaining 10.5% of its variance. Further, also considering both independents individually, it can be stated that even though Movie and Format have a significant effect on WOM, 40.2% of the variance in WOM is attributed to the Format, and only 16.4% to the Movie. Therefore, *hypothesis 5* is fully supported. Moreover, we can also observe that both movies had higher scores for WOM in VR, thus, investing in VR techniques can contribute to positive WOM of a movie. Regarding the non-parametric tests conducted, the independent Movie does not impact WOM significantly in the VR group (Sig.=.504), but it does in the 2D group (Sig.=.000). However, considering the Format, we can conclude that there is a significant impact on WOM both in the documentary (Sig.=.000) and animation (Sig.=.000) movie.

Moreover, in order to understand how WOM is affected by movies' coolness perceptions and empathy responses, a regression analysis was additionally conducted.

Based on previous statements by Warren and colleagues (2019), brand coolness can result in positive brand attitudes, such as WOM and WTP. The present research reinforces this statement by concluding that indeed brand coolness perceptions of a movie influence WOM. In fact, as previous literature contends (2019), the cooler a movie is perceived as, the more positive WOM is. Therefore, *hypothesis 6a)* is fully supported.

Considering Escalas and Stern (2003), emotional responses (sympathy and empathy) can lead to positive consumers' attitudes, and empathy has an even greater influence on those attitudes than sympathy. Further, Gupta, Pansari and Kumar (2018) contend that experiences affect customers' satisfaction levels and emotions toward a certain brand, which can consequently have an impact on both direct (purchases) and indirect (referrals, feedback and influences) customer experience. Through the present dissertation and methodology, it is possible to conclude that

empathy is useful to explain WOM. Further, the higher the empathy levels, the higher the increase in WOM, hence, empathy has a positive effect on WOM. Therefore, this study reinforces previous statements by Escalas and Stern (2003) and further supports that emotions toward a brand – in this case, toward a movie – influence referrals and feedback, as argued by Gupta, Pansari and Kumar (2018). *Hypothesis 6b)* is fully supported.

Feelings and emotions can influence the way consumers perceive a narrative, and consequently, those perceptions have an impact on the attitudes and judgments (Kemp, Bui and Chapa, 2012). Further, any experience with a brand can affect the emotions a customer has toward that brand (Braktus, Schmitt, & Zarantonello, 2009; Gupta, Pansari & Kumar, 2018). By conducting a simple regression analysis, it was possible to conclude that empathy responses are an important explanatory variable of brand coolness, thus *hypothesis 7* is fully supported. This result is in agreement with previous literature (Kemp, Bui & Chapa, 2012), considering that empathy, an emotional response, explains 34.9% of the variability in brand coolness perceptions, in other words, in how cool we judge a movie to be.

Table 6.1 Validation of the research questions

Research Question	Hypothesis	Validation
How important is the content and technological format in which a movie is presented, regarding the constructs of brand coolness, emotional responses (sympathy and empathy) and WOM?	**H2.** The technological format (2D and VR) and the movie (documentary and animation) have a significant effect on brand coolness.	Fully supported
	H3. The technological format (2D or VR) and the movie (documentary and animation) have a significant effect on sympathy.	Partly supported
	H4. The technological format (2D or VR) and the movie (documentary and animation) have a significant effect on empathy.	Partly supported
	H5. The technological format (2D or VR) and the movie (documentary and animation) have a significant effect on WOM.	Fully supported
How does marketing literature on brand coolness applies to fictional brands, more precisely to movies?	**H1a).** Characteristics of brand coolness in movies vary with the format.	Partly supported
	H1b). Characteristics of brand coolness in movies vary with the movie.	Partly supported
	H6a). Movie's coolness perceptions influence WOM.	Fully supported
How do emotional responses to movies impact consumers' attitudes and coolness perceptions?	**H6b).** Empathy responses to movies influence WOM.	Fully supported
	H7. Empathy responses to movies influence brand coolness perceptions.	Fully supported

Source: own elaboration.

6.2 General Discussion

Considering the objectives and research questions initially established, the present research conducted analysis on the proposed hypothesis in order to provide insights on:

- The importance of the technological content and the story content in which a movie is presented regarding brand coolness, emotional responses, and WOM.
- The application of the construct brand coolness to fictional brands.
- The importance of emotional responses regarding WOM and brand coolness perceptions.

As suggested by Warren and colleagues (2019) and regarding the analysis conducted in this study, the cooler a movie is perceived as the more willing consumers are to talk about and recommend the movie. Thus, the previous analysis suggests that experimenting a movie in virtual reality affects brand coolness perceptions and reinforces its coolness characteristics more than movies watched in traditional 2D screens.

However, as stated by the present study and as literature contends (Desai and Basuroy 2005; MacWhinney 2015; Gazley, Clark and Sinha 2011; Hennig-Thurau, Houston and Sridhar 2006), the movie genre is also an important determinant of movie consumption. Therefore, in order to reinforce movies' coolness characteristics, it is important to consider the story itself, which in fact impacts coolness perceptions more than the technological format. The interaction between the technological format and the movie story also has an impact on brand coolness perceptions. However, the conducted analysis suggests that 2D movies with lower scores on coolness characteristics components can indeed benefit from a significant increase of coolness perceptions when experienced in VR. Nonetheless, when a movie is already perceived as cool in 2D, then the increase of coolness perceptions due to the technological format is less significant. Meaning that, even though both factors (the format and the movie story) affect brand coolness significantly, the movie story is more important than the format and the interaction between the format and the movie story.

Empathic responses are often considered by literature and movie critics, the ultimate experience to movies (Sheldon, 2019; Rooij, 2019). Moreover, research on advertising and emotional literature explains that both sympathy and empathy responses can influence consumers' attitudes toward a brand. Nevertheless, it is important to note that sympathy is considered more a

distanced feeling, while empathy, on the other hand, is a stronger emotional reaction that consequently has a greater influence on consumers' attitudes (Escalas and Stern, 2003).

Emotional responses (sympathy and empathy) to movies are affected by the technological format used to present a movie. Both sympathy and empathy scores were higher when the movies were experienced in VR than in 2D. However, the impact of the technological format was greater in empathy responses than in sympathy responses. In fact, regarding sympathy, the conducted analysis suggests that (similarly to brand coolness), the movie story has a higher impact than the format. Contrarily, in order to enhance empathic responses, the format in which a movie is presented affects empathy more than the movie story. Thus, this gives reasoning to the work of Biocca and Delaney (1995) and Shin (2018), that VR impacts humans perceptions and cognitive levels.

As for the construct of word-of-mouth – which, as previously mentioned, can determine the success of failure of a movie at the box office performance – it was possible to assess in this dissertation that the format, the movie story and the interaction between these two, can indeed have an impact on the willingness to talk about and recommend a movie. However, the format has greater effect on WOM than the other variables. Moreover, both the documentary and the animation movies experienced in VR had superior scores on WOM than movies watched in 2D.

6.3 Theoretical Implications

The current study contributes to the literature on virtual reality regarding the motion picture industry by considering the importance of both the technological format in which a movie is presented and the movie story itself on brand coolness perceptions, emotional responses and WOM.

Considering the first research question the present research (based on a quantitative parametric and non-parametric analysis) assesses, Cinematic Virtual Reality can achieve higher brand coolness perceptions, stronger emotional responses, and more positive WOM than the same movie presented in 2D. Nonetheless, this research further verifies and agrees with existent literature (Farah, Ramadan and Harb, 2019; Shin and Biocca, 2017; and Kerrigan, 2018), on how the content itself – in this case, the story a movie tells – is a crucial component of any experience despite the technology used to do so. In fact, considering brand coolness perceptions and sympathy responses, the movie story has proven to be even more important explaining the variance in these dimensions

than the technological format. Thus, we conclude that the movie story also has a significant impact on the four main constructs explored throughout the study and suggests that it is a crucial component of the overall virtual reality experience.

Pondering recent research on the application of VR to movies (Staubli, 2017; Mateer, 2017; Ross, 2020), the popularity of this technology has been increasing in the industry especially due to its the ability to provide a sensorial experience that enhances immersion, transportation and enables synesthetic interactions with greater proximity. This research contributes to the theory on Cinematic Virtual Reality and on marketing literature by exploring how the mentioned technological tool differs from traditional 2D screens regarding constructs that consider consumer behavior aspects (such as, emotional responses) and marketing concepts (such as, brand attitudes and brand coolness perceptions).

Regarding the second research question proposed, the present research additionally contributes to the theory on marketing literature by attempting to understand the application of brand coolness to fictional brands, which are based on hedonism consumption. As Warren and colleagues (2019) contend, how brands reinforce cool characteristics components depends on specific factors, such as the brand's industry, history, and target customers.

Regarding the motion picture industry and considering the hedonic nature of a movie as a brand, the conducted research verifies that, as previous literature contends (Warren et al., 2019), positive brand coolness perceptions can result in positive WOM. Further, different movies, similarly to different brands, have higher or lower scores on different coolness characteristics. Hence, the movie story influences coolness characteristics. Additionally, coolness components are also influenced by the format, and the application of VR to movies can help to reinforce the lacking characteristics of coolness, thus resulting in more positive coolness perceptions.

Moreover, considering the third research question established, this dissertation contributes to the understanding of how emotional responses to movies can impact brand attitudes and coolness perceptions by suggesting that the more empathic are the responses to movies, the higher the brand coolness perceptions. Although, future research on the relationship between emotional responses and brand coolness needs to be further explored to understand the factors that interact or moderate with the several coolness characteristics. Moreover, regarding empathy responses to movies, it was possible to determine through the present research than empathy can help contributing to the success of a movie by leading to more positive WOM. Indeed, the emotional connection can define

the overall experience of a movie (Sheldon, 2019) and, as Gupta, Pansari and Kumar (2018) contend, experiences have an impact on customers' satisfaction levels and emotions toward a brand. Thus, the present study encourages future research to investigate more closely how emotional responses to movies can influence movies' consumption.

6.4 Managerial Implications

As Eliashberg, Hui and Zhang (2007) contend, despite being a highly profitable industry, it is also considered a risky venue due to the high costs associated. Thus, considering the benefits and challenges VR still faces in the motion picture industry, the present study led to relevant implications that can help managers from the motion picture industry decide upon investments and marketing strategies. Reflecting over the discussion of the results of the present study, studios should make marketing and management investments on strategies that not only contribute to the box office performance, but also consider the costs, the return-on-investment, and the story itself.

First and foremost, word-of-mouth can be a determinant factor of movie consumption, even before the audience has watched it. Thus, studios should focus on providing a movie and applying marketing strategies that lead to positive WOM. The previous analysis suggests that when producing a movie, the movie story itself impacts the willingness to talk about and recommend a movie. However, the format in which it is presented also affects WOM. In fact, watching a movie in virtual reality can provide a movie experience that has a greater effect on increasing positive WOM than watching the same movie in 2D. Therefore, studio managers should invest on the production of virtual reality movies, in order to benefit from more positive WOM, which consequently may result in a greater audience.

Secondly, the current dissertation suggests the application of the construct of brand coolness to movies. Movies that are considered cool can benefit from positive brand attitudes, such as positive WOM, which in turn contributes to the success of a movie in the market. Thus, studios should be able to identify the cool characteristic components a movie has, and which ones are lacking, in order to reinforce those characteristics and take advantage from enhanced coolness perceptions. Following the general discussion of the present research, if a movie is not scoring high enough regarding brand coolness characteristics, then the priority to reinforce them should be on the movie quality of the content first, and only then (if possible, according to associated costs)

consider the investment on the technological format, pondering that the movie story has a greater impact on brand coolness than the format.

In order for managers in the motion picture industry to increase the movie's coolness perceptions, this study recommends that the importance of the story should be prioritized over the investment in VR. Ideally, studios that are able to invest in VR should not neglect but rather reinforce the quality of the story content, in order to optimize the benefits of VR as a marketing tool and as a new form of cinema. To reinforce the quality of the content, studio managers should produce movies that meet the coolness perceptions of the audience. For instance, if an animation movie is targeted to children, then the studios should attempt to understand which characteristics of coolness children value the most and produce a movie story that reinforces those characteristics. A similar approach should be considered regarding the application of VR. Meaning, studios should always bear in mind who the audience is. For instance, when producing a Sci-Fi or an Historical movie, it is important to consider whether the majority audience is characterized as being "tech-savvy" or are they usually perceived as "late adopters of technology", and according to that information establish how to provide an experiment that enhances coolness perceptions either by focusing mostly on the content or on providing an immersive virtual environment through VR.

The present study further suggests that empathy influences brand coolness perceptions. More precisely, the more empathic reactions a spectator has toward a movie, the cooler the movie might be perceived as. Moreover, the conducted analysis additionally confirms that the more empathic the responses to a movie are, the higher the willingness to talk about and recommend a movie. Thus, bearing in mind the discussion of the results, in order to increase empathy in movies, the technological format has proven to be more important than the movie story. It would, therefore, be reasonable for studio managers to explore the technological abilities virtual reality has to provoke empathic responses in the spectator. Further, despite the technology, existing cinematic empathy techniques used in 2D movies can and should be adopted to Cinematic Virtual Reality. Therefore, this study recommends studio managers and directors to implement cinematic techniques that increase empathy responses and develop new techniques by exploring the technological abilities VR provides. Moreover, the quality of the story should be simultaneously considered, since it also influences empathy significantly.

In conclusion, considering the hedonistic consumption that the motion picture industry is based on, the way consumers experience products – in this case, movies – is highly related to

consumer behavior aspects, thus, studios should develop strategies that consider emotional responses (such as, empathy and sympathy), movie genre preferences, coolness perceptions and multisensory experiences. A movie that is perceived as cool and has greater empathic responses, can benefit from positive brand attitudes, such as word-of-mouth, which in turn, leads to a positive increase regarding the box office performance. Studios that invest in virtual reality can indeed reinforce coolness characteristics, lead to more positive WOM, and result in higher sympathy and empathy responses. Nonetheless, the benefits of using VR in the motion picture industry should not consider the technology alone, but also the importance of the story, especially regarding brand coolness perceptions and sympathy responses.

Therefore, this study recommends studio managers to: (a) understand the audience behind different movie genre preferences; (b) understand what specific audiences perceive as being cool (e.g. understand which coolness characteristics do people that watch horror movies value the most) ; (c) provide a movie story that meets the audience's expectations regarding coolness characteristics; (d) explore the immersive abilities of virtual reality and attempt to implement existing cinematic techniques to Cinematic Virtual Reality, in order to enhance coolness characteristics and empathic responses to movies.

In brief, the more studios are able to provide an overall positive experience that consists on both quality content and technological performance according to the audience, the more positive brand attitudes and consequent return-on-investment the studios will benefit from.

6.5 Limitations and Future Research

The present study's findings and implications extend former studies on virtual reality as a marketing tool and as a new form of cinema, and additionally contribute to further understanding of brand coolness, emotional responses, and word-of-mouth regarding fictional brands. Nonetheless, in spite of the valuable insights this research has provided, we are aware of its limitations and the many important questions that remain to be investigated and explored by future research.

First, due to the limited commercial availability of movies in virtual reality on Oculus' website that also have a 2D counterpart, the study only considered two movies, which are from two different genres (animation and documentary), thus, external validity may be reduced. Future

research may consider including not only different movie genres (e.g. horror, drama, comedy), but also more movies within the same genre.

Furthermore, the two-way ANOVA analysis conducted in this research did not always meet all of the analysis' assumptions, which could change the research's conclusions. Thus, two additional non-parametric tests (Mann-Whitney test) were performed in order to validate the results. In addition to the quantitative research method, future research could refine the study by also considering a qualitative approach (e.g. in-depth interviews and focus groups), which would allow for a deeper understanding of the respondents' perceptions. Moreover, the demographics (nationality, age, and gender) did not play an important role in the research, which limits the study culturally. Thus, future research could be improved by understanding how demographic aspects can impact the results.

Additionally, the present study does not consider the novelty of the technology. Even though some participants had participated in VR experiences before, none of the participants had ever experienced a movie in VR. As Kerrigan (2018) explains, the first forms of cinema were highly concerned with the display itself, because there was a curiosity for the device, thus, it was only when filmmakers progressed that the focus turned to the narrative engagement. Therefore, it would be interesting for future research to conduct further analysis on groups of consumers who have been in touch with the technological device before and have experienced VR movies and compare the results with a group that has never experienced VR. This would allow for more refined insights on the importance of the movie story and the technological format on consumers' perceptions.

Plus, the present dissertation does not consider the influence that star power may have on the overall experience of the movie. Considering Desai and Basuroy (2005) and Peng, Cui and Li (2012), the familiarity a consumer might have with different movies and respective elements (e.g. genre, starts, music, story) might influence the ratings and the expected quality of a movie. Hence, this limitation encourages future research to explore and consider the importance of the elements within a movie that can impact, negatively or positively, the brand experience toward that movie.

To our knowledge, this study is the first of its kind to consider brand coolness perceptions to movies. However, it remains to be understood how the lifecycle of brand coolness applies to fictional brands. Furthermore, the present study considers the technological format and the movie story as factors that can contribute to reinforcing brand coolness characteristics components,

however, regarding movies, it remains to be explored what other drivers should be explored and used to enhance brand coolness perceptions.

Furthermore, according to Mateer (2017), the development of cinematic virtual reality remains highly uncertain in the Classical Hollywood Cinema, Moreover, as Eliashberg, Elberse and Leenders (2006) contend, cinematic virtual reality requires the establishment of new metrics of success and deeper knowledge of new marketing strategies. Thus, we strongly encourage future research to consider consumer behavior concepts as a fundamental pillar in research and further develop applicable scales that consider the specifications of the technological device.

References

Aaker, J.L. (1997). Dimensions of Brand Personality, *Journal of Marketing Research*, 34(3), 347-357. DOI: 10.1177/002224379703400304

Alcañiz, M., Bigné, E. & Guixeres, J. (2019). Virtual Reality in Marketing: A Framework, Review, and Research Agenda. *Frontiers in Psychology*, *10*(1530), 1-15. DOI: 10.3389/fpsyg.2019.01530

Anaza, N.A., Kemp, E., Briggs, E., & Borders, A.L. (2019). Tell me a story: The role of narrative transportation and the C-suite in B2B advertising. *Industrial Marketing Management*, *89*, 1-14. DOI: 10.1016/j.indmarman.2019.02.002

Barnes, J. S., Mattson, J., & Hartley, N. (2015). Assessing the value of real-life brands in Virtual Worlds. *Technological Forecasting & Social Change*, *92*, 12-24. https://doi.org/10.1016/j.techfore.2014.10.017

Biocca, F., & Delaney, B. (1995). Immersive Virtual Reality Technology. In F. Biocca & M.R. Levy (Eds.), *Communication in the Age of Virtual Reality*: 56-124. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Blagov, P.S., Von Handorf, K., Pugh, A.T., & Walker, M.G. (2019). Maladaptive personality and psychopathy dimensions as predictors of music and movie preferences in US adults. *Psychology of Music*, *47*(6), 821-833. https://doi.org/10.1177/0305735619864630

Bowden, J.L.H., Gabbott, M., & Naumann, K. (2015). Service relationships and the customer disengagement – engagement conundrum. *Journal of Marketing Management*, *31*(7-8), 774-806. https://doi.org/10.1080/0267257X.2014.983143

Brakus, J.J., Schmitt, B.H., & Zarantonello, L. (2009). Brand Experience: What is It? How Is It Measured? Does It Affect Loyalty?. *Journal of Marketing*, *73*, 52-68. https://doi.org/10.1509/jmkg.73.3.052

Bryman, E., Bell, A. & Harley, B. (2011). *Business Research Methods* (5th ed.). New York: Oxford University Press, Inc.

Cowan, K., & Ketron, S. (2019). A dual model of product involvement for effective virtual reality: The roles of imagination, co-creation, telepresence and interactivity. *Journal of Business Research*, *100*, 483-492. DOI: 10.1016/j.jbusres.2018.10.063

Craig, C.S., Greene, W.H., & Versaci, A. (2015). E-Word of Mouth: Early Predictor Of Audience Engagement. *Journal of Advertising Research*, *55*, 62-72. DOI: 10.2501/JAR-55-1-062-072

Cutting, J.E. (2016). Narrative theory and the dynamics of popular movies. *Psychonomic Bulletin and Review*, *23*, 1713-1743. DOI: 10.3758/s13423-016-1051-4

Dawson, P., & Sykes, C. (2019). Concepts of Time and Temporality in the Storytelling and Sensemaking Literatures: A Review and Critique. *International Journal of Management Review*, *21*, 97-114. https://doi.org/10.1111/ijmr.12178

Deng, X., Unnava, H.R., & Lee, H. (2019). "Too good to be true?" when virtual reality decreases interest in actual reality. *Journal of Business Research*, *100*, 561-570. https://doi.org/10.1016/j.jbusres.2018.11.008

Desai, K.K. & Basuroy, S. (2005). Interactive Influence of Genre Familiarity, Star Power, and Critics' Reviews in the Cultural Goods Industry: The Case of Motion Pictures. *Psychology & Marketing*, *22*(3), 203-233. DOI: 10.1002/mar.20055

Ding, N., Zhou, W., & Fung, A.Y.H. (2018). Emotional effect of cinematic VR compared with traditional 2D film. *Telematics and Informatics*, *35*, 1572-1579. DOI: 10.1016/j.tele.2018.04.003

Eliashberg, J., Hui, S.K., & Zhang, J. (2007). From Story Line to Box Office: A New Approach for Green-Lighting Movie Scripts. *Management Science*, *53*(6), 881-893. DOI:10.1287/mnsc.1060.0668

Eliashberg, J., Elberse, A., & Leenders, M. (2006). The Motion Picture Industry: Critical Issues in Practice, Current Research, and New Research Directions. *Marketing Science*, *25*(6), 638-661. DOI: 10.1287/mksc.1050.0177

Elliot, A.C., & Woodward, W.A. (2007). *Statistical Analysis Quick Reference Guidebook: With SPSS Examples*. California: Sage Publications, Inc.

Escalas, J.E. (2004). Narrative Processing: Building Consumer Connections to Brands. *Journal of Consumer Psychology*, *14*(1&2), 168-180. https://doi.org/10.1207/s15327663jcp1401&2_19

Escalas, J. E. & Stern B.B. (2003). Sympathy and Empathy: Emotional Responses to Advertising Dramas. *Journal of Consumer Research*, *29*, 566-578. https://doi.org/10.1086/346251

Farah, M.F., Ramadan, Z.B., & Harb, D.H. (2019). The examination of virtual reality at the intersection of consumer experience, shopping journey and physical retailing. *Journal of Retailing and Consumer Services*, *48*, 136-143. DOI: 10.1016/j.jretconser.2019.02.016

Farshid, M., Jeannette, P., Eriksson, T., & Keitzmann, J.H. (2018). Go boldly! Explore augmented reality (AR), virtual reality (VR), and mixed reality (MR) for business. *Business Horizons*, *61*, 657-663. DOI: 10.1016/j.bushor.2018.05.009

Feng, Y., Xie, Q., & Lou, C. (2019). The Key to 360-Degree Video Advertising: An Examination of the Degree of Narrative Structure. *Journal of Advertising*, *48*, 137-152. https://doi.org/10.1080/00913367.2019.1585305

Fetscherin, M. (2019). The five types of brand hate: How they affect consumer behavior. *Journal of Business Research*, *101*, 116-127. DOI: 10.1016/j.jbusres.2019.04.017

Gaustad, T., Samuelsen, B.M., Warlop, L., & Fitzsimons, G.J. (2018). The perils of self-brand connections: Consumer response to changes in brand meaning. *Psychology and Marketing*, *35*, 818-829. https://doi.org/10.1002/mar.21137

Gazley, A., Clark, G. & Sinha, A. (2011). Understanding preferences for motion pictures. *Journal of Business Research*, *64*, 854-861. DOI: 10.1016/j.jbusres.2010.09.012

Gilliam, D.A., & Flaherty, K.E. (2015). Storytelling by the sales force and its effect on buyer-seller exchange. *Industrial Marketing Management*, *46*, 132-142 DOI: 10.1016/j.indmarman.2015.01.013

Goldberg, L.R. (1990). An Alternative "Description of Personality": The Big-Five Factor Structure. *Journal of Personality and Social Psychology*, *59*(6), 1216-1229. https://doi.org/10.1037/0022-3514.59.6.1216

Green, M., & Brock, T.C. (2000). The Role of Transportation in the Persuasiveness of Public Narratives. *Journal of Personality and Social Psychology*, *79*(5), 701-721. DOI: 10.1037//0022-3514.79.5.701

Grudzewski, F., Awdziej, M., Mazurek, G., & Piotrowska, K. (2018). Virtual Reality in marketing communication – the impact on the message, technology and offer perception – empirical study. *Economics and Business Review*, *4*(18), 36-50. DOI: 10.18559/ebr.2018.3.4

Gupta, S., Pansari, A. & Kumar, V. (2018). Global Customer Engagement. *Journal of International Marketing*, *26*(1), 4-29. https://doi.org/10.1509/jim.17.0091

Hair, J. F. J., Black, W. C., Babin, B. J. & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). New Jersey: Prentice-Hall, Inc.

Hair, J., Celsi, M., Bush, R., & Ortinau, D. (2016). *Essentials of Marketing Research* (4th ed.). New York, NY: McGraw-Hill Education.

Hall, A. (2005). Audience Personality and the Selection of Media and Media Genres. *Media Psychology*, *7*(4), 377-398. DOI: 10.1207/S1532785XMEP0704_4

Hennig-Thurau, T., Houston, M.B., & Sridhar, S. (2006). Can good marketing carry a bad product? Evidence from the motion picture industry. *Marketing Letters*, *17*, 205-219. DOI: 10.1007/s11002-006-7416-0

Herskovitz, S., & Crystal, M. (2010). The essential brand persona: storytelling and branding. *Journal of Business Strategy*, *31*, 21-28. https://doi.org/10.1108/02756661011036673

Hirschman, E.C., & Holbrook, M.B. (1982). Hedonic Consumption: Emerging Concepts, Methods and Propositions. *Journal of Marketing*, *46*(3):92-101. DOI: 10.2307/1251707

Hudson, S., Matson-Barkat, S., Pallamin, N., & Jegou, G. (2019). With or without you? Interaction and immersion in a virtual reality experience. *Journal of Business Research*, *100*, 459-468. DOI: 10.1016/j.jbusres.2018.10.062

Japutra, A., & Molinillo, S. (2019). Responsible and active brand personality: On the relationships with brand experience and key relationship constructs. *Journal of Business Research*, *99*, 464-471. https://doi.org/10.1016/j.jbusres.2017.08.027

Joshi, A.M. & Hanssens, D.M. (2009). Movie Advertising and the Stock Market Valuation of Studios: A Case of "Great Expectations?". *Marketing Science*, 28(2), 239-250. DOI: 10.1287/mksc.1080.0392

Jung, J., Yu, J., Seo, Y., & Ko, E. (2019). Consumer experiences of virtual reality: Insights from VR luxury brand fashion shows. *Journal of Business Research*, 1-7. DOI: 10.1016/j.jbusres.2019.10.038

Kang, C., Bennett, G., & Peachey, J.W. (2016). Five dimensions of brand personality traits in Sports. *Sport Management Review*, *19*(4), 441-453.https://doi.org/10.1016/j.smr.2016.01.004

Kerrigan, F. (2018). Movies. *Consumption Markets & Cultures*, *21*(5), 503-509.https://doi.org/10.1080/10253866.2017.1306207

Khan, I. & Rahman, Z. (2015). A review and future directions of brand experience research. *International Strategic Management Review*, *3*, 1-14. https://doi.org/10.1016/j.ism.2015.09.003

Kemp, E., Bui, M. & Chapa, S. (2012). The role of advertising in consumer emotion management. *International Journal of Advertising*, *31*(2), 339-353. https://doi.org/10.2501/IJA-31-2-339-353

Kent, M.L. (2015). The Power of Storytelling in public relations: Introducing the 20 master plots. *Public Relations Review*, *41*, 480-489. http://dx.doi.org/10.1016/j.pubrev.2015.05.011

Kim, J., Lloyd, S., & Cervellon, M. (2016). Narrative-transportation storylines in luxury brand advertising: Motivating consumer engagement. *Journal of Business Research, 69*, 304-313. DOI: 10.1016/j.jbusres.2015.08.002

Kowan, K., & Ketron, S. (2019). A dual model of product involvement for effective virtual reality: the roles of imagination, co-creation, telepresence, and interactivity. *Journal of Business Research*, *100*, 483-492. DOI: 10.1016/j.jbusres.2018.10.063

Laer, T., Visconti, L.M. & Feiereisen, S. (2018). Need for narrative. *Journal of Marketing Management*, *34*(5), 484-496.https://doi.org/10.1016/j.jbusres.2018.10.053

LaTour, K., LaTour, M. & Zinkhan, G.M. (2010). Coke is It: How stories in childhood memories illuminate an icon. *Journal of Business Research*, *63*, 328-336. DOI: 10.1016/J.JBUSRES.2009.05.011

Laurell, C., Christian, S., Adam, B., & Larsson, D. (2019). Exploring barriers to adoption of Virtual Reality through Social Media Analytics and Machine Learning – An assessment of technology, network, price and trialability. *Journal of Business Research*, *100*, 469-474. DOI: 10.1016/j.jbusres.2019.01.017

Lee, J., Kim, J. & Choi, J.Y. (2019). The adoption of virtual reality devices: The technology acceptance model integration enjoyment, social interaction, and strength of the social ties. *Telematics and Informatics*, *39*, 37-48. https://doi.org/10.1016/j.tele.2018.12.006

Lemon, K.N. & Verhoef, P.C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*, *80*, 69-96. https://doi.org/10.1509/jm.15.0420

Leung, X.Y., Lyu, J. & Bai, B. (2020). A fad or a future? Examining the effectiveness of virtual reality advertising in the hotel industry. *International Journal of Hospitality Management*, 1-10. http://dx.doi.org/10.1016/j.ijhm.2019.102391

Lin, J.T. (2017). Fear in virtual reality (VR): Fear elements, coping reactions, immediate and next-day fright responses toward a survival horror zombie virtual reality game. *Computers in Human Behavior*, *72*, 350-361. DOI: 10.1016/j.chb.2017.02.057

Loureiro, S.M.C., Guerreiro, J., Eloy, S., Langaro, D., & Panchapakesan, P. (2019). Understanding the use of Virtual Reality in Marketing: A text mining-based review. *Journal of Business Research*, *100*, 514-530. DOI: 10.1016/j.jbusres.2018.10.055

Lund, N.F., Cohen, S.A., & Scarles, C. (2018). The Power of social media storytelling in destination branding. *Journal of Destination Marketing & Management*, *8*, 271- 280. DOI: 10.1016/j.jdmm.2017.05.003

Malhotra, N.K. (1993). *Marketing Research: An Applied Orientation*. Upper Saddle River, United States: Pearson Education.

Mateer, J. (2017). Directing for Cinematic Virtual Reality: how traditional film director's craft applies to immersive environments and notions of presence. *Journal of Media Practice*, *18*, 14-25. https://doi.org/10.1080/14682753.2017.1305838

McFerran, B., Dahl, D.W., Gorn, G.J., & Honea, H. (2010). Motivational determinants of transportation into marketing narratives. *Journal of Consumer Psychology*, *20*, 306-316. https://doi.org/10.1016/j.jcps.2010.06.017

Mingione, M., Cristofaro, M., & Mondi, D. (2020). 'If I give you my emotion, what do I get?' Conceptualizing and measuring the co-created emotional value of the brand. *Journal of Business Research*, *109*, 310-320. https://doi.org/10.1016/j.jbusres.2019.11.071

Mooradian, T.A., Matzler, K., & Szykman, L. (2008). Empathetic responses to advertising: Testing a network of antecedents and consequences. *Marketing Letters*, *19*, 79-92. DOI: 10.1007/s11002-008-9032-7

Muzellec, L., Kanitz, C., & Lynn, T. (2013). Fancy a coffee with *Friends* in 'Central Perk'? Reverse product placement, fictional brands and purchase intention. *International Journal of Advertising*, *32*(3), 399-417. DOI: 10.2501/IJa-32-3-399-417

Nalabandian, T., & Ireland, M.E. (2019). Genre-typical narrative arcs in films are less appealing to lay audiences and professional film critics. *Behavior Research Methods*, *51*, 1636-1650. https://doi.org/10.3758/s13428-018-1168-7

Nash, K. (2018). Virtually real: exploring VR documentary. *Studies in Documentary Film*, *12*(2): 97-100. https://doi.org/10.1080/17503280.2018.1484992

Nikolinakou, A. & King, K.W. (2018). Viral video ads: Emotional triggers and social media virality. *Psychology & Marketing*, *35*, 715-726. https://doi.org/10.1002/mar.21129

Palomba, A. (2020). Consumer personality and lifestyles at the box office and beyond: How demographics, lifestyles and personalities predict movie consumption. *Journal of Retailing and Consumer Services*, *55*(1), 1-11. DOI: 10.1016/j.jretconser.2020.102083

Palombini, A. (2017). Storytelling and telling history. Towards a grammar of narratives for Cultural Heritage dissemination in the Digital Era. *Journal of Cultural Heritage*, *24*, 134-139. https://doi.org/10.1016/j.culher.2016.10.017

Peng, L., Cui, G. & Li, C. (2013). The Comparative impact of critics and consumers: Applying the Generalisability Theory to online movie ratings. *International Journal of Market Research*, 55(3), 413-436. DOI: 10.2501/IJMR-2013-037

Pizzi, G., Vannucci, V. & Aiello, G. (2019). Branding in the time of virtual reality: Are virtual store brand perceptions real?.*Journal of Business Research*. https://doi.org/10.1016/j.jbusres.2019.11.063

Prentice, C., Wang, X. & Loureiro, S.M.C. (2019). The influence of brand experience and service quality on customer engagement. *Journal of Retailing and Consumer Services*, *50*, 50-59. https://doi.org/10.1016/j.jretconser.2019.04.020

Rooij, M. (2019). Carefully Constructed Yet Curiously Real: How Major American Animation Studios Generate Empathy Through a Shared Style of Character Design. *Animation: an interdisciplinary journal*, *14*(3), 191-206. https://doi.org/10.1177/1746847719875071

Ross, M. (2020). Virtual Reality's New Synesthetic Possibilities. *Television & New Media*, *21*(3), 297-314. https://doi.org/10.1177/1527476418805240

Rust, R. (2019). The future of marketing. *International Journal of Research in Marketing*, 1-12.

Ryu, K., Lehto, X.Y., Gordon, S.E., & Fu, X. (2019). Effect of a brand story structure on narrative transportation and perceived brand image of luxury hotels. *Tourism Management*, 71, 348-363. https://doi.org/10.1016/j.tourman.2018.10.021

Sanders, J. & van Krieken, K. (2018). Exploring Narrative Structure and Hero Enactment in Brand Stories. *Frontiers in Psychology*, *9*(1645), 1-18. https://doi.org/10.3389/fpsyg.2018.01645

Saunders, M., Lewis, P. & Tornhill, A. (2009). *Research methods for business students*. (5th ed.). Harlow: Pearson Education.

Sheldon, Z. (2019). The Gollum Problem: Empathy and Digital Characters in Cinema, *Animation: an interdisciplinary journal*, *14*(3), 207-221. https://doi.org/10.1177/1746847719881702

Shieh, H. & Lai, W. (2017). The relationships among brand experience, brand resonance and brand loyalty in experimental marketing: Evidence from smart phone in Taiwan. *Journal of Economics and Management*, *28*(2), 58-73. DOI: 10.22367/jem.2017.28.04

Shin, D. (2018). Empathy and embodied experience in virtual environment: To what extent can virtual reality stimulate empathy and embodied experience?. *Computers in Human Behavior*, *78*, 64-73. https://doi.org/10.1016/j.chb.2017.09.012

Shin, D. & Biocca, F. (2017). Exploring immersive experience in journalism. *New media & Society*, *20*, 2800-2823. https://doi.org/10.1177/1461444817733133

Solja, E, Liljander, V., & Söderlund, M. (2018). Short brand stories on packaging: An examination of consumer responses. *Psychology & Marketing*, *35*, 294-306. https://doi.org/10.1002/mar.21087

Staubli, M. (2017). VR Unleashes New Dimensions of Horror. *Frames Cinema Journal*, *11*, 1-24. Retrieved from http://framescinemajournal.com/article/vr-unleashes-new-dimensions-of-horror/

Steinhart, D. (2018). Visualizing Global Filmmaking in 1960s Promotional Featurettes. *Cinema Journal*, *57*(4), 96-119. https://doi.org/10.1353/cj.2018.0053

Su, N. & Reynolds, D. (2017). Effects of brand personality dimensions on consumers' perceived self-image congruity and functional congruity with hotel brands. *International Journal of Hospitality Management*, *66*, 1-12. DOI: 10.1016/j.ijhm.2017.06.006

Tussyadiah, P., Dan, W., Jung, T., & Tom Dieck, M.C. (2018). Virtual reality, presence, and attitude change: Empirical evidence from tourism. *Tourism Management*, 66, 140-154. DOI: 10.1016/j.tourman.2017.12.003

Uhl, K.P. (1962). Factorial Design – Aid to Management. *Journal of Marketing*, *26*, 62-66. https://doi.org/10.1177/002224296202600112

Verhellen, Y., Dens, N., & Pelsmacker, P. (2016). Do I know you? How brand familiarity and perceived fit affect consumers' attitudes towards brands placed in movies. *Marketing Lettters*, *27*, 461-471. DOI: 10.1007/s11002-015-9347-0

Warren, C., Batra, R., Loureiro, S.M.C., & Bagozzi, R.P. (2019). Brand Coolness. *Journal of Marketing*, *83*(5), 36-56.https://doi.org/10.1177/0022242919857698

Warren, C., Campbell, M.C. (2014). What Makes Things Cool? How Autonomy Influences Perceived Coolness. *Journal of Consumer Research*, *41*, 543-563. DOI: 10.1086/676680

Woodside, A. (2010). Brand-Consumer Storytelling Theory and Research: Introduction to a Psychology & Marketing Special Issue. *Psychology and Marketing*, *27*, 531-540. DOI: 10.1002/mar.20342

Yoon, Y., Polpanumas, C., & Park, Y.J. (2017). The Impact of Word of Mouth via Twitter on Moviegoers' Decisions and Film Revenues. *Journal of Advertising Research*, *57*, 144-158. doi: 10.2501/JAR-2017-022

Zeithaml, V.A., Berry, L.L. and Parasuraman, A.V. (1996) The Behavioral Consequences of Service Quality. *Journal of Marketing*, *60*(2), 31-46. DOI: 10.2307/1251929

Annexes

Annex A.

Annex A.1 *Box Office revenue in North America from 1980 to 2019*
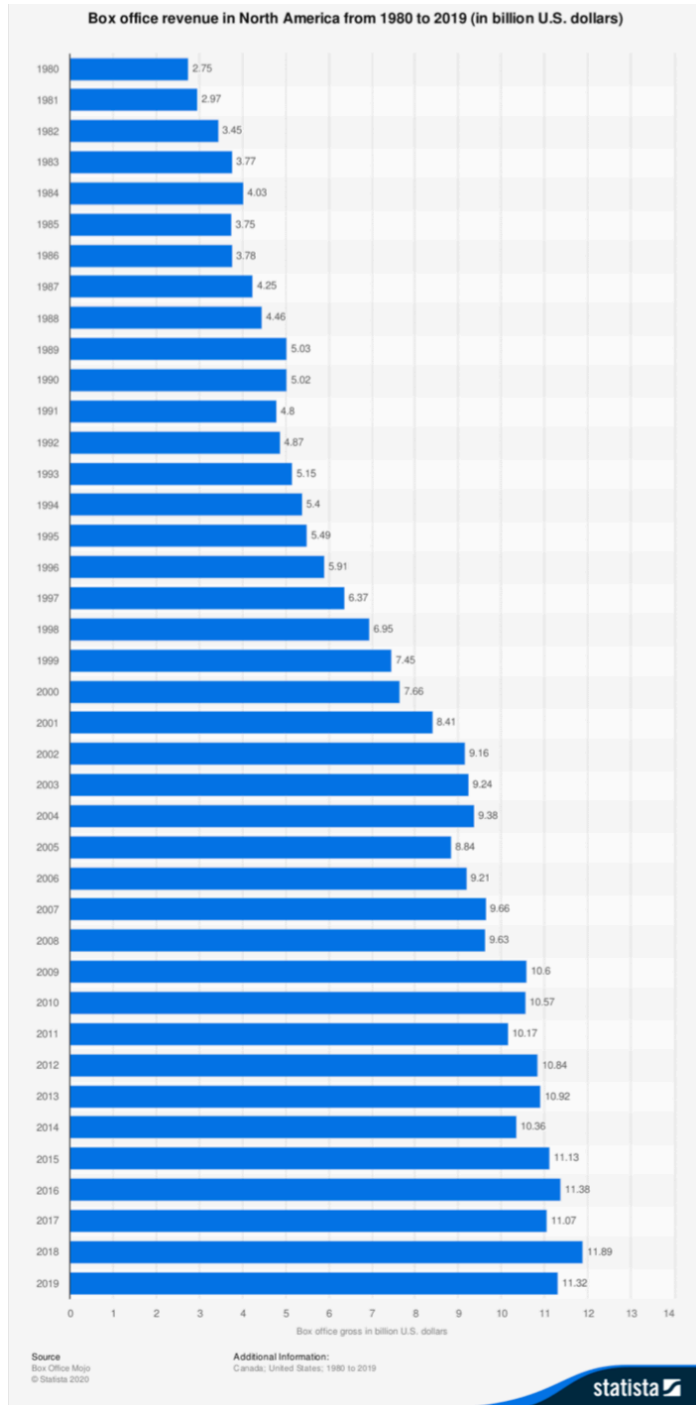
Source: Statista (2020)

Annex A.2 *Sympathy and Empathy Scale*

	AD RESPONSE SYMPATHY (ARS) AND AD RESPONSE EMPATHY (ARE) SCALE ITEMS AND AVERAGE STANDARDIZED FACTOR LOADINGS	
ARS items	1. Based on what was happening in the commercial, I understood what the characters were feeling.	**.99**
	2. Based on what was happening in the commercial, I understood what was bothering the characters.	**.95**
	3. While watching the ad, I tried to understand the events as they occurred.	.61
	4. While watching the ad, I tried to understand the characters' motivation.	.61
	5. I was able to recognize the problems that the characters in the ad had.	**.92**
ARE items	1. While watching the ad, I experienced feelings as if the events were really happening to me.	.93
	2. While watching the ad, I felt as though I were one of the characters.	**.95**
	3. While watching the ad, I felt as though the events in the ad were happening to me.	**.96**
	4. While watching the commercial, I experienced many of the same feelings that the characters portrayed.	.81
	5. While watching the commercial, I felt as if the characters' feelings were my own.	**.93**

Source: Escalas and Stern (2003).

Annex B.

Annex B.1 *Questionnaire*

Demographics

Age *

A sua resposta

Gender *

○ Female

○ Male

○ Other

Nationality *

Selecionar ▼

Brand Coolness: Motion Picture Industry

Welcome!

I'm a student of Master in Marketing at ISCTE Business School, currently writing a dissertation on how can the technological format influence consumers' perception of brand coolness regarding fictional brands, more precisely, movies.

Please make sure you have experienced one of the movies in Virtual Reality before starting the questionnaire.

You can choose to watch ONE of the following:

A) Genre: short, animation, adventure.
Title: Crow: The Legend

B) Genre: short, documentary.
Is Anna Ok?

It takes approximately 5 minutes to participate in the questionnaire.
The collected data will only be used for academic purposes. Please do not hesitate to contact me if you have any questions.

Thank you for your time!

*Obrigatório

*

☐ Yes, I have experienced one of the movies in virtual reality.

Seguinte

Movies

Which of the following movies did you experience? *

○ Crow: The Legend

○ Is Anna ok?

After experiencing the movie, how cool would you consider it? *

○ I think the movie was cool.

○ The movie was neither cool or uncool.

○ I think the movie was uncool.

I think the movie was extraordinary. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

I think the movie was energetic. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

I think the movie was aesthetically appealing. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

I think the movie was original. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

I think the movie was authentic. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

I think the movie was rebellious. *

	1	2	3	4	5	6	7	
Strongly disagree	O	O	O	O	O	O	O	Strongly agree

I think the movie was of high status. *

	1	2	3	4	5	6	7	
Strongly disagree	O	O	O	O	O	O	O	Strongly agree

I think the movie has the potential to be popular. *

	1	2	3	4	5	6	7	
Strongly disagree	O	O	O	O	O	O	O	Strongly agree

I think the movie appeals to subcultures. *

	1	2	3	4	5	6	7	
Strongly disagree	O	O	O	O	O	O	O	Strongly agree

I think the movie has the potential to be iconic. *

	1	2	3	4	5	6	7	
Strongly disagree	O	O	O	O	O	O	O	Strongly agree

Considering your overall experience watching the movie, how cool would you perceive it? *

	1	2	3	4	5	6	7	
Very Uncool	O	O	O	O	O	O	O	Very Cool

Sympathy and Empathy

Based on what was happening in the movie, I understood what the characters were feeling. *

	1	2	3	4	5	6	7	
Strongly disagree	O	O	O	O	O	O	O	Strongly agree

Based on what was happening in the movie, I understood what was bothering the characters. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

I was able to recognize the problems that the characters in the movie had. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

While experiencing the movie, I felt as though I was one of the characters. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

While experiencing the movie, I felt as though the events in the movie were happening to me. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

While experiencing the movie, I felt as if the characters' feelings were my own. *

	1	2	3	4	5	6	7	
Strongly disagree	○	○	○	○	○	○	○	Strongly agree

Word of Mouth

I will talk to other people about this movie. *

	1	2	3	4	5	6	7	
Not likely	○	○	○	○	○	○	○	Very likely

I will recommend this movie to other people. *

	1	2	3	4	5	6	7	
Not likely	○	○	○	○	○	○	○	Very likely

Annex C.

Annex C.1 *Factor Analysis of the dimension Brand Coolness*

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,924
Bartlett's Test of Sphericity	Approx. Chi–Square	896,059
	df	45
	Sig.	,000

Communalities

	Initial	Extraction
Extraordinary	1,000	,754
Energetic	1,000	,687
Aesthetically_appealing	1,000	,627
Original	1,000	,585
Authentic	1,000	,407
Rebellious	1,000	,290
High_status	1,000	,572
Popular	1,000	,725
Subcultures	1,000	,509
Iconic	1,000	,752

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
Extraordinary	,868
Energetic	,829
Aesthetically_appealing	,792
Original	,765
Authentic	,638
Rebellious	,539
High_status	,756
Popular	,851
Subcultures	,714
Iconic	,867

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,909	59,086	59,086	5,909	59,086	59,086
2	,832	8,317	67,403			
3	,788	7,880	75,283			
4	,616	6,163	81,446			
5	,452	4,518	85,964			
6	,389	3,893	89,857			
7	,310	3,097	92,955			
8	,264	2,640	95,594			
9	,243	2,427	98,021			
10	,198	1,979	100,000			

Extraction Method: Principal Component Analysis.

Annex C.2 *Factor Analysis of the dimension Sympathy*

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,738
Bartlett's Test of Sphericity	Approx. Chi–Square	240,919
	df	3
	Sig.	,000

Component Matrix[a]

	Component 1
S_1_Based on what was happening in the movie, I understood what the characters were feeling.	,906
S_2_Based on what was happening in the movie, I understood what was bothering the characters.	,881
S_3_I was able to recognize the problems that the characters in the movie had.	,919

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Communalities

	Initial	Extraction
S_1_Based on what was happening in the movie, I understood what the characters were feeling.	1,000	,821
S_2_Based on what was happening in the movie, I understood what was bothering the characters.	1,000	,777
S_3_I was able to recognize the problems that the characters in the movie had.	1,000	,844

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,442	81,395	81,395	2,442	81,395	81,395
2	,331	11,023	92,418			
3	,227	7,582	100,000			

Extraction Method: Principal Component Analysis.

Annex C.3 *Factor Analysis of the dimension Empathy*

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,754
Bartlett's Test of Sphericity	Approx. Chi–Square	379,476
	df	3
	Sig.	,000

Component Matrix^a

	Component 1
E_1_While watching the movie, I felt as though I was one of the characters.	,928
E_2_While watching the movie, I felt as though the events in the movie were happening to me.	,958
E_3_While watching the movie, I felt as if the characters' feelings were my own.	,942

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Communalities

	Initial	Extraction
E_1_While watching the movie, I felt as though I was one of the characters.	1,000	,862
E_2_While watching the movie, I felt as though the events in the movie were happening to me.	1,000	,917
E_3_While watching the movie, I felt as if the characters' feelings were my own.	1,000	,886

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,665	88,838	88,838	2,665	88,838	88,838
2	,212	7,083	95,921			
3	,122	4,079	100,000			

Extraction Method: Principal Component Analysis.

Annex C.4 *Factor Analysis of the dimension WOM*

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi–Square	252,859
	df	1
	Sig.	,000

Component Matrix[a]

	Component
	1
WOM_TalkAbout	,978
WOM_Recommend	,978

Extraction Method: Principal
Component Analysis.

a. 1 components extracted.

Communalities

	Initial	Extraction
WOM_TalkAbout	1,000	,956
WOM_Recommend	1,000	,956

Extraction Method: Principal Component
Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,911	95,564	95,564	1,911	95,564	95,564
2	,089	4,436	100,000			

Extraction Method: Principal Component Analysis.

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Annex D.

Annex D.1 *Independent Sample T-test for Hypothesis 1a)*

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2–tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Extraordinary	Equal variances assumed	,327	,569	-3,469	143	,001	-,871	,251	-1,367	-,375
	Equal variances not assumed			-3,493	142,450	,001	-,871	,249	-1,364	-,378
Energetic	Equal variances assumed	4,313	,040	-2,141	143	,034	-,553	,258	-1,064	-,042
	Equal variances not assumed			-2,166	143,000	,032	-,553	,255	-1,058	-,048
Aesthetically_appealing	Equal variances assumed	10,853	,001	-3,905	143	,000	-,977	,250	-1,471	-,482
	Equal variances not assumed			-4,014	136,617	,000	-,977	,243	-1,458	-,495
Original	Equal variances assumed	,955	,330	-3,159	143	,002	-,770	,244	-1,251	-,288
	Equal variances not assumed			-3,172	141,590	,002	-,770	,243	-1,250	-,290
Authentic	Equal variances assumed	,783	,378	-3,272	143	,001	-,633	,193	-1,015	-,251
	Equal variances not assumed			-3,295	142,489	,001	-,633	,192	-1,013	-,253
Rebellious	Equal variances assumed	1,501	,223	-,343	143	,732	-,088	,258	-,598	,422
	Equal variances not assumed			-,341	137,103	,733	-,088	,259	-,601	,424
High_status	Equal variances assumed	,267	,606	-2,182	143	,031	-,550	,252	-1,049	-,052
	Equal variances not assumed			-2,200	142,652	,029	-,550	,250	-1,045	-,056
Popular	Equal variances assumed	1,182	,279	-1,809	143	,073	-,519	,287	-1,086	,048
	Equal variances not assumed			-1,826	142,845	,070	-,519	,284	-1,081	,043
Subcultures	Equal variances assumed	1,141	,287	-3,977	143	,000	-1,037	,261	-1,552	-,521
	Equal variances not assumed			-4,007	142,597	,000	-1,037	,259	-1,548	-,525
Iconic	Equal variances assumed	,342	,560	-3,125	143	,002	-,841	,269	-1,373	-,309
	Equal variances not assumed			-3,138	141,612	,002	-,841	,268	-1,371	-,311

Annex D.2 *Group Statistics for Hypothesis 1a)*

Group Statistics

	Format	N	Mean	Std. Deviation	Std. Error Mean
Extraordinary	2D	78	4,49	1,569	,178
	VR	67	5,36	1,432	,175
Energetic	2D	78	4,46	1,657	,188
	VR	67	5,01	1,419	,173
Aesthetically_appealing	2D	78	4,95	1,728	,196
	VR	67	5,93	1,185	,145
Original	2D	78	4,96	1,498	,170
	VR	67	5,73	1,420	,174
Authentic	2D	78	5,13	1,210	,137
	VR	67	5,76	1,102	,135
Rebellious	2D	78	3,54	1,509	,171
	VR	67	3,63	1,594	,195
High_status	2D	78	3,90	1,584	,179
	VR	67	4,45	1,428	,174
Popular	2D	78	4,53	1,814	,205
	VR	67	5,04	1,609	,197
Subcultures	2D	78	3,77	1,635	,185
	VR	67	4,81	1,480	,181
Iconic	2D	78	3,58	1,656	,187
	VR	67	4,42	1,568	,192

Annex D.3 *Independent Sample T-test for Hypothesis 1b)*

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Extraordinary	Equal variances assumed	,731	,394	5,707	143	,000	1,357	,238	,887	1,827
	Equal variances not assumed			5,527	113,902	,000	1,357	,245	,871	1,843
Energetic	Equal variances assumed	2,467	,118	8,004	143	,000	1,760	,220	1,325	2,195
	Equal variances not assumed			7,780	116,011	,000	1,760	,226	1,312	2,208
Aesthetically_appealing	Equal variances assumed	27,211	,000	8,821	143	,000	1,882	,213	1,460	2,304
	Equal variances not assumed			8,163	88,724	,000	1,882	,231	1,424	2,340
Original	Equal variances assumed	,000	,999	2,454	143	,015	,611	,249	,119	1,102
	Equal variances not assumed			2,450	130,671	,016	,611	,249	,117	1,104
Authentic	Equal variances assumed	5,169	,024	1,701	143	,091	,340	,200	-,055	,736
	Equal variances not assumed			1,764	142,776	,080	,340	,193	-,041	,722
Rebellious	Equal variances assumed	3,013	,085	2,194	143	,030	,561	,256	,056	1,067
	Equal variances not assumed			2,255	141,499	,026	,561	,249	,069	1,053
High_status	Equal variances assumed	1,595	,209	4,210	143	,000	1,026	,244	,544	1,507
	Equal variances not assumed			4,126	120,821	,000	1,026	,249	,534	1,518
Popular	Equal variances assumed	1,872	,173	7,268	143	,000	1,816	,250	1,322	2,310
	Equal variances not assumed			7,090	118,052	,000	1,816	,256	1,309	2,324
Subcultures	Equal variances assumed	,177	,675	4,255	143	,000	1,110	,261	,594	1,626
	Equal variances not assumed			4,228	128,363	,000	1,110	,263	,591	1,629
Iconic	Equal variances assumed	,013	,910	5,655	143	,000	1,433	,253	,932	1,934
	Equal variances not assumed			5,694	134,671	,000	1,433	,252	,935	1,931

Annex D.4 *Group Statistics for Hypothesis 1b)*

Group Statistics

	Movies1	N	Mean	Std. Deviation	Std. Error Mean
Extraordinary	Crow: The Legend	83	5,47	1,272	,140
	Is Anna ok?	62	4,11	1,590	,202
Energetic	Crow: The Legend	83	5,47	1,193	,131
	Is Anna ok?	62	3,71	1,453	,185
Aesthetically_appealing	Crow: The Legend	83	6,20	,907	,100
	Is Anna ok?	62	4,32	1,637	,208
Original	Crow: The Legend	83	5,58	1,474	,162
	Is Anna ok?	62	4,97	1,493	,190
Authentic	Crow: The Legend	83	5,57	1,308	,144
	Is Anna ok?	62	5,23	1,015	,129
Rebellious	Crow: The Legend	83	3,82	1,639	,180
	Is Anna ok?	62	3,26	1,354	,172
High_status	Crow: The Legend	83	4,59	1,362	,149
	Is Anna ok?	62	3,56	1,564	,199
Popular	Crow: The Legend	83	5,54	1,373	,151
	Is Anna ok?	62	3,73	1,631	,207
Subcultures	Crow: The Legend	83	4,72	1,525	,167
	Is Anna ok?	62	3,61	1,593	,202
Iconic	Crow: The Legend	83	4,58	1,539	,169
	Is Anna ok?	62	3,15	1,469	,187

Annex D.5 *Two-Way ANOVA: normality and homogeneity of variances*

Dependent	Format	Movie	Shapiro-Wilk	Skewness		Kurtosis		Levene's Test (based on mean)
			Sig.	Sta.	Std.Error	Sta.	Std.Error	Sig.
Brand Coolness	2D	Crow: The Legend	.258	-.027	.350	-.846	.688	.302
		Is Anna Ok?	.639	-.275	.414	-.377	.809	
	VR	Crow: The Legend	.002	-1.215	.388	1.457	.759	
		Is Anna Ok?	.790	-.057	.427	-.304	.833	
Sympathy	2D	Crow: The Legend	.000	-.783	.350	-.563	.688	.483
		Is Anna Ok?	.001	-1.068	.414	.520	.809	
	VR	Crow: The Legend	.000	-1.753	.388	2.981	.759	
		Is Anna Ok?	.001	-1.225	.427	1.057	.833	
Empathy	2D	Crow: The Legend	.085	-.076	.350	-.620	.688	.001
		Is Anna Ok?	.024	.732	.414	.469	.809	
	VR	Crow: The Legend	.002	-1.342	.388	3.006	.759	
		Is Anna Ok?	.007	-.581	.427	-.725	.833	
WOM	2D	Crow: The Legend	.050	-.306	.350	-.610	.688	.020
		Is Anna Ok?	.018	.003	.414	-1.041	.809	
	VR	Crow: The Legend	.000	-1.292	.388	2.125	.759	
		Is Anna Ok?	.000	-1.565	.427	2.853	.833	

Annex D.6 *Two-Way ANOVA outliers*

Dependent	Format	Movie	Outliers
Brand Coolness	2D	Crow: The Legend	0
		Is Anna Ok?	0
	VR	Crow: The Legend	1 (case: 87)
		Is Anna Ok?	0
Sympathy	2D	Crow: The Legend	0
		Is Anna Ok?	0
	VR	Crow: The Legend	2 (case: 96; 94)
		Is Anna Ok?	1 (case: 123)
Empathy	2D	Crow: The Legend	0
		Is Anna Ok?	1 (case:63)
	VR	Crow: The Legend	2 (case: 96; 101)
		Is Anna Ok?	0
WOM	2D	Crow: The Legend	0
		Is Anna Ok?	0
	VR	Crow: The Legend	1 (case: 87)
		Is Anna Ok?	1 (case: 141)

Annex D.7 *Q-Q Plots and Boxplots – Two-way ANOVA*

1) Brand Coolness: 2D; Crow: The Legend
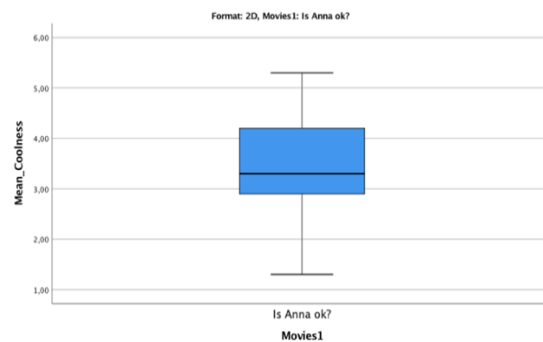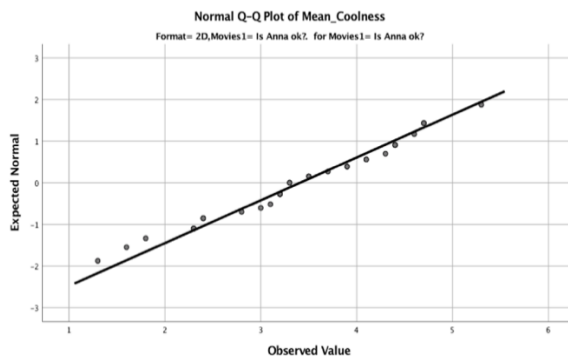
2) Brand Coolness: 2D; Is Anna Ok?
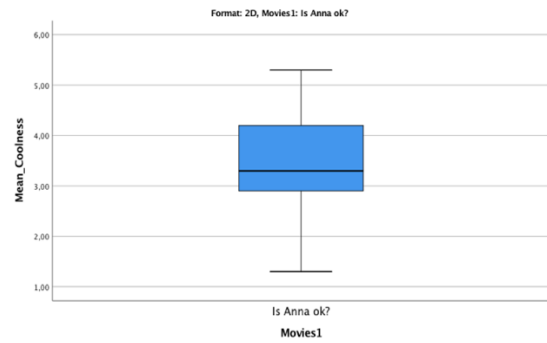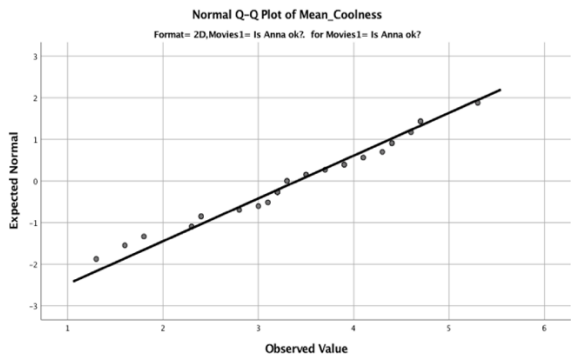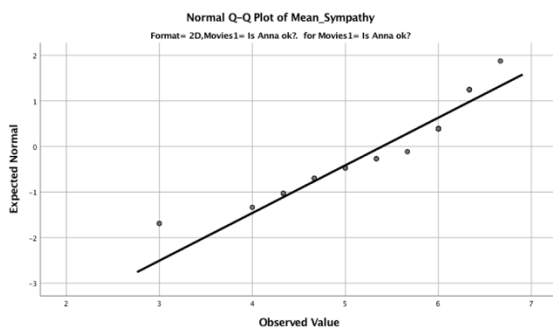

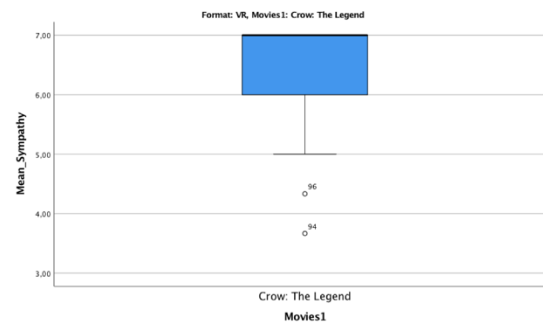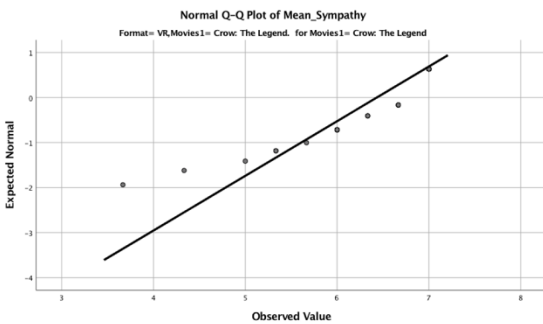3) Brand Coolness: VR; Crow: The Legend
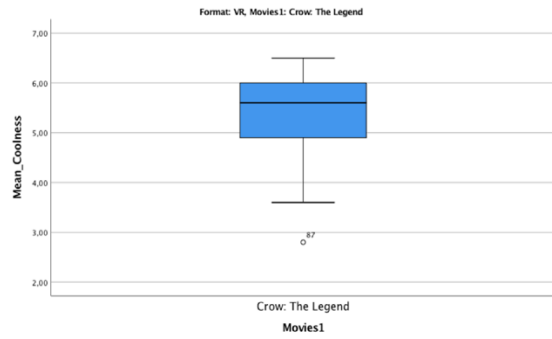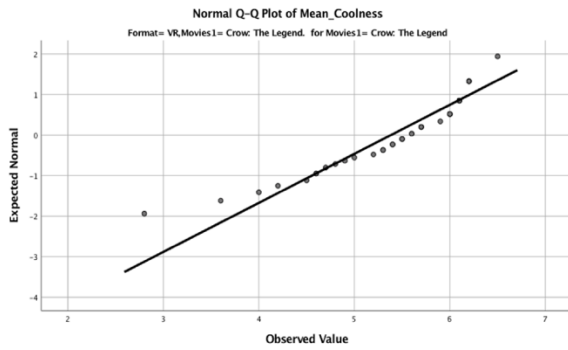
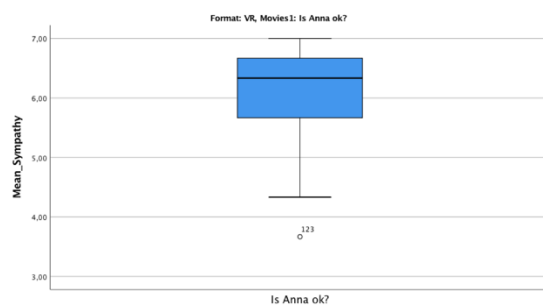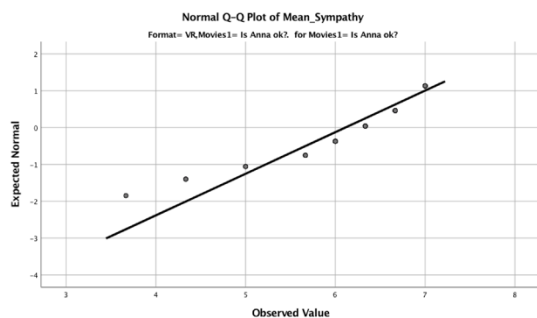4) Brand Coolness: VR; Is Anna Ok?
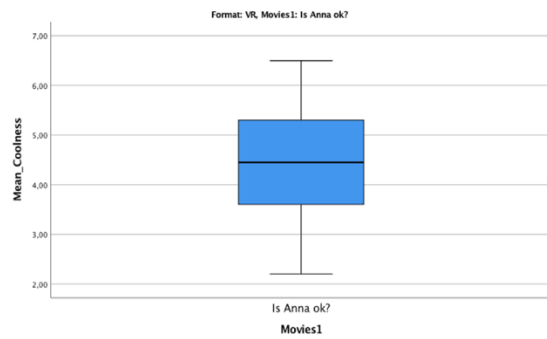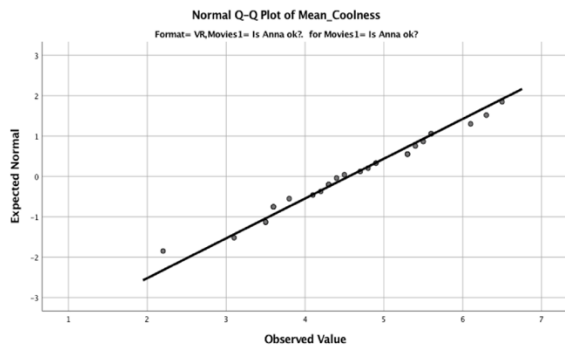
5) Sympathy: 2D; Crow: The Legend
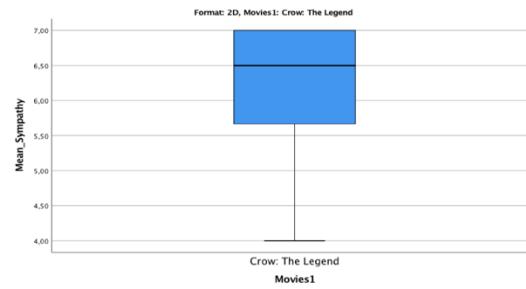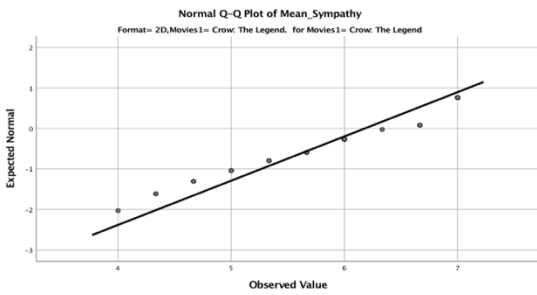
6) Sympathy: 2D; Is Anna Ok?
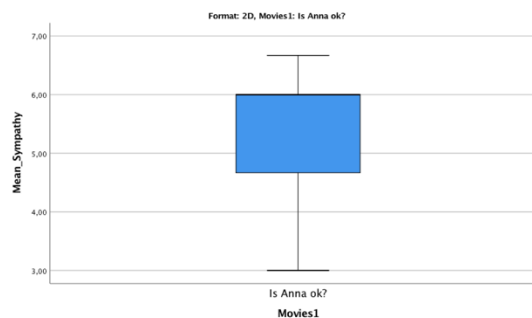
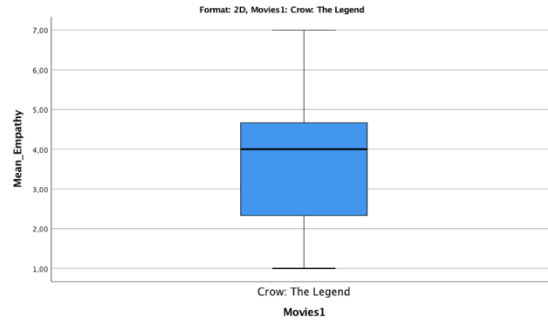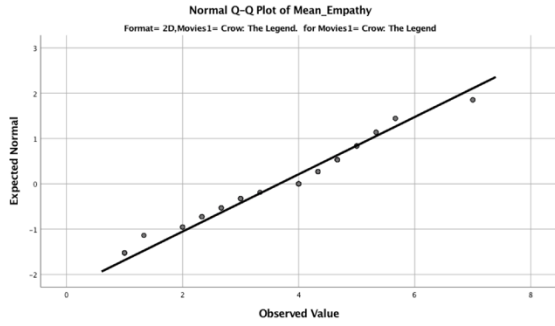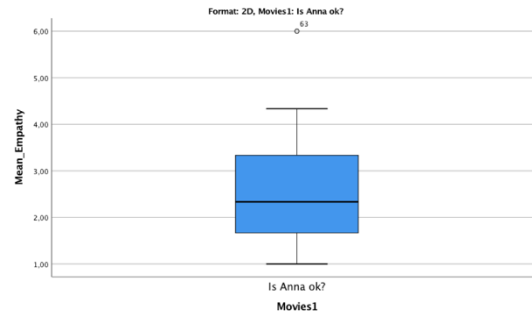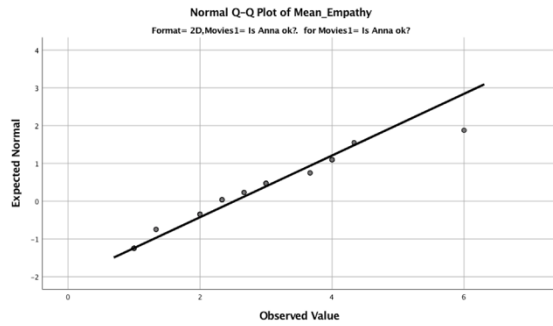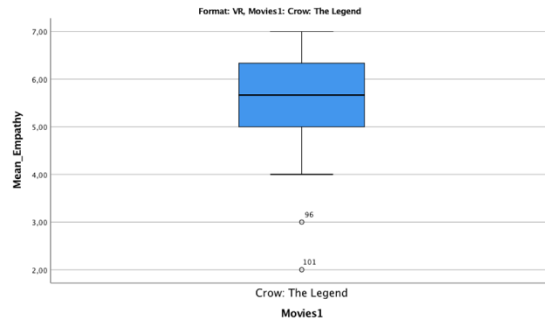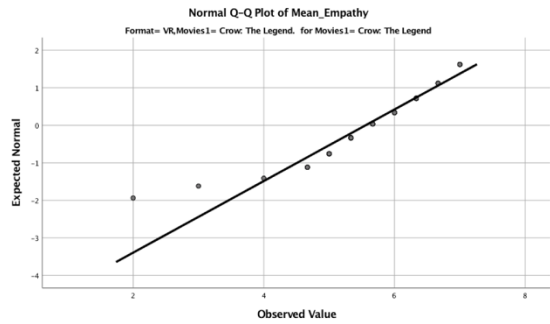

7) Sympathy: VR; Crow: The Legend

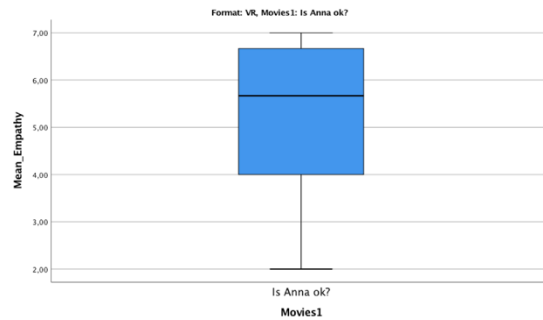8) Sympathy: VR; Is Anna Ok?

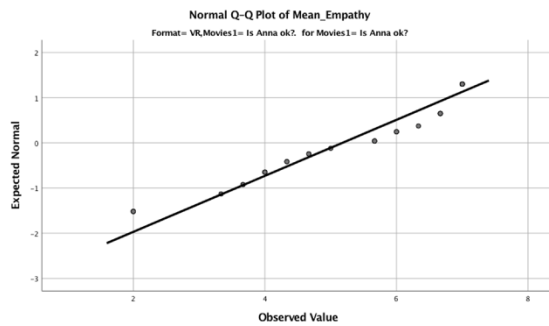9) Empathy: 2D; Crow: The Legend

10) Empathy: 2D; Is Anna Ok?

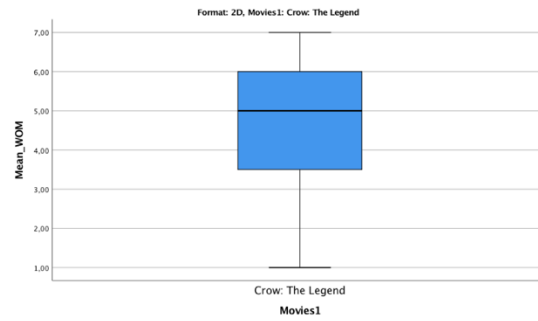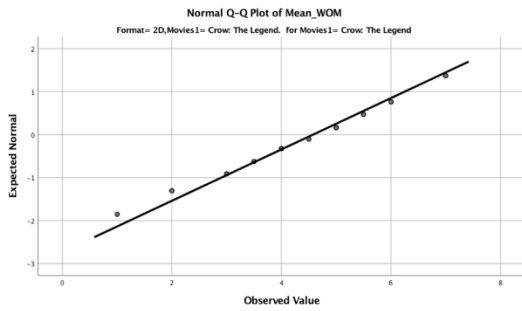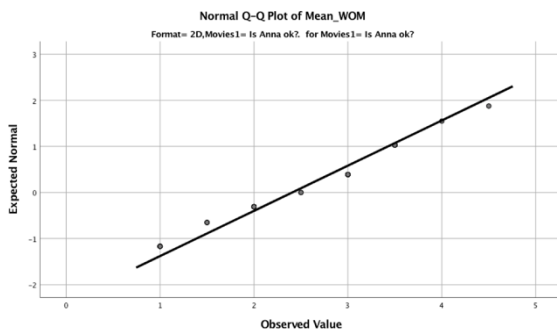

11) Empathy: VR; Crow: The Legend

12) Empathy: VR; Is Anna Ok?

13) WOM: 2D; Crow: The Legend

14) WOM: 2D; Is Anna Ok?
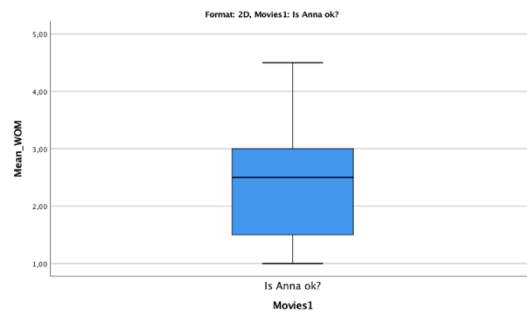
15) WOM: VR; Crow: The Legend
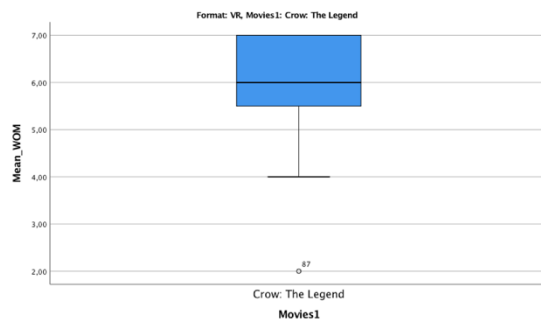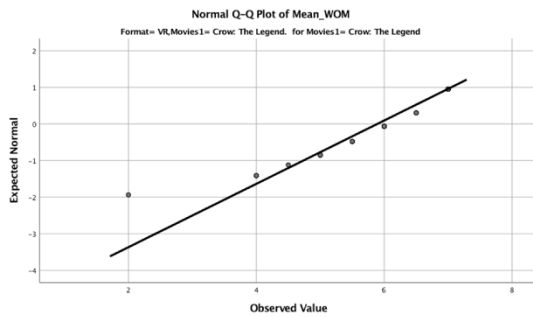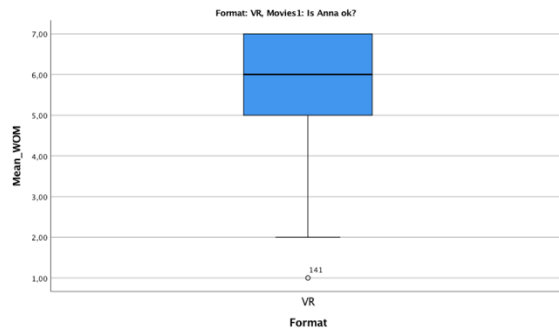

16) WOM: VR; Is Anna Ok?
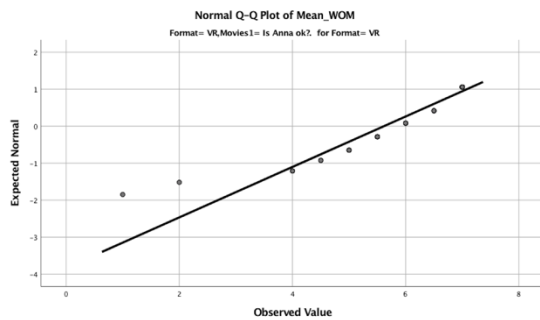
Annex D.8 *Two-way ANOVA outputs for Brand Coolness*

Descriptive Statistics

Dependent Variable: Mean_Coolness

Format	Movies1	Mean	Std. Deviation	N
2D	Crow: The Legend	4,9696	1,01934	46
	Is Anna ok?	3,4094	,97198	32
	Total	4,3295	1,25864	78
VR	Crow: The Legend	5,3838	,82648	37
	Is Anna ok?	4,5567	1,01461	30
	Total	5,0134	,99832	67
Total	Crow: The Legend	5,1542	,95551	83
	Is Anna ok?	3,9645	1,14177	62
	Total	4,6455	1,19204	145

Tests of Between-Subjects Effects

Dependent Variable: Mean_Coolness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	74,131[a]	3	24,710	26,701	,000	,362
Intercept	2960,755	1	2960,755	3199,258	,000	,958
Format	21,511	1	21,511	23,244	,000	,142
Movies1	50,280	1	50,280	54,331	,000	,278
Format * Movies1	4,741	1	4,741	5,123	,025	,035
Error	130,489	141	,925			
Total	3333,840	145				
Corrected Total	204,620	144				

a. R Squared = ,362 (Adjusted R Squared = ,349)

Pairwise Comparisons

Dependent Variable: Mean_Coolness

(I) Format	(J) Format	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
2D	VR	-,781*	,162	,000	-1,101	-,461
VR	2D	,781*	,162	,000	,461	1,101

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Pairwise Comparisons

Dependent Variable: Mean_Coolness

(I) Movies1	(J) Movies1	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Crow: The Legend	Is Anna ok?	1,194*	,162	,000	,874	1,514
Is Anna ok?	Crow: The Legend	-1,194*	,162	,000	-1,514	-,874

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

4. Format * Movies1

Dependent Variable: Mean_Coolness

Format	Movies1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
2D	Crow: The Legend	4,970	,142	4,689	5,250
	Is Anna ok?	3,409	,170	3,073	3,746
VR	Crow: The Legend	5,384	,158	5,071	5,696
	Is Anna ok?	4,557	,176	4,209	4,904

Annex D.9 *Two-way ANOVA outputs for Sympathy*

Descriptive Statistics

Dependent Variable: Mean_Sympathy

Format	Movies1	Mean	Std. Deviation	N
2D	Crow: The Legend	6,1812	,91545	46
	Is Anna ok?	5,3958	,95579	32
	Total	5,8590	1,00435	78
VR	Crow: The Legend	6,4324	,82352	37
	Is Anna ok?	6,1111	,88553	30
	Total	6,2886	,86046	67
Total	Crow: The Legend	6,2932	,87945	83
	Is Anna ok?	5,7419	,98332	62
	Total	6,0575	,96172	145

Tests of Between-Subjects Effects

Dependent Variable: Mean_Sympathy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	20,001[a]	3	6,667	8,305	,000	,150
Intercept	5132,800	1	5132,800	6394,054	,000	,978
Format	8,242	1	8,242	10,267	,002	,068
Movies1	10,804	1	10,804	13,459	,000	,087
Format * Movies1	1,899	1	1,899	2,366	,126	,017
Error	113,187	141	,803			
Total	5453,667	145				
Corrected Total	133,188	144				

a. R Squared = ,150 (Adjusted R Squared = ,132)

Pairwise Comparisons

Dependent Variable: Mean_Sympathy

(I) Movies1	(J) Movies1	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
Crow: The Legend	Is Anna ok?	,553*	,151	,000	,255	,851
Is Anna ok?	Crow: The Legend	-,553*	,151	,000	-,851	-,255

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Pairwise Comparisons

Dependent Variable: Mean_Sympathy

(I) Format	(J) Format	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
2D	VR	-,483*	,151	,002	-,781	-,185
VR	2D	,483*	,151	,002	,185	,781

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

3. Format * Movies1

Dependent Variable: Mean_Sympathy

Format	Movies1	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
2D	Crow: The Legend	6,181	,132	5,920	6,442
	Is Anna ok?	5,396	,158	5,083	5,709
VR	Crow: The Legend	6,432	,147	6,141	6,724
	Is Anna ok?	6,111	,164	5,788	6,434

Annex D.10 *Two-way ANOVA outputs for Empathy*

Descriptive Statistics

Dependent Variable: Mean_Empathy

Format	Movies1	Mean	Std. Deviation	N
2D	Crow: The Legend	3,6667	1,58231	46
	Is Anna ok?	2,5208	1,22383	32
	Total	3,1966	1,54531	78
VR	Crow: The Legend	5,5586	1,04838	37
	Is Anna ok?	5,1778	1,61348	30
	Total	5,3881	1,33409	67
Total	Crow: The Legend	4,5100	1,65879	83
	Is Anna ok?	3,8065	1,94697	62
	Total	4,2092	1,81512	145

Tests of Between-Subjects Effects

Dependent Variable: Mean_Empathy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	200,271ᵃ	3	66,757	34,333	,000	,422
Intercept	2526,842	1	2526,842	1299,545	,000	,902
Format	182,550	1	182,550	93,885	,000	,400
Movies1	20,561	1	20,561	10,574	,001	,070
Format * Movies1	5,164	1	5,164	2,656	,105	,018
Error	274,161	141	1,944			
Total	3043,444	145				
Corrected Total	474,432	144				

a. R Squared = ,422 (Adjusted R Squared = ,410)

Pairwise Comparisons

Dependent Variable: Mean_Empathy

(I) Format	(J) Format	Mean Difference (I–J)	Std. Error	Sig.ᵇ	95% Confidence Interval for Differenceᵇ	
					Lower Bound	Upper Bound
2D	VR	−2,274*	,235	,000	−2,738	−1,810
VR	2D	2,274*	,235	,000	1,810	2,738

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Pairwise Comparisons

Dependent Variable: Mean_Empathy

(I) Movies1	(J) Movies1	Mean Difference (I–J)	Std. Error	Sig.ᵇ	95% Confidence Interval for Differenceᵇ	
					Lower Bound	Upper Bound
Crow: The Legend	Is Anna ok?	,763*	,235	,001	,299	1,227
Is Anna ok?	Crow: The Legend	−,763*	,235	,001	−1,227	−,299

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

3. Format * Movies1

Dependent Variable: Mean_Empathy

Format	Movies1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
2D	Crow: The Legend	3,667	,206	3,260	4,073
	Is Anna ok?	2,521	,247	2,034	3,008
VR	Crow: The Legend	5,559	,229	5,105	6,012
	Is Anna ok?	5,178	,255	4,674	5,681

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Annex D.11 *Two-way ANOVA outputs for WOM*

Descriptive Statistics

Dependent Variable: Mean_WOM

Format	Movies1	Mean	Std. Deviation	N
2D	Crow: The Legend	4,5761	1,67321	46
	Is Anna ok?	2,4063	1,01947	32
	Total	3,6859	1,79123	78
VR	Crow: The Legend	5,8919	1,15551	37
	Is Anna ok?	5,6167	1,46619	30
	Total	5,7687	1,30072	67
Total	Crow: The Legend	5,1627	1,59861	83
	Is Anna ok?	3,9597	2,04117	62
	Total	4,6483	1,89125	145

Tests of Between-Subjects Effects

Dependent Variable: Mean_WOM

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	246,450[a]	3	82,150	43,122	,000	,478
Intercept	3016,451	1	3016,451	1583,400	,000	,918
Format	180,739	1	180,739	94,874	,000	,402
Movies1	52,742	1	52,742	27,686	,000	,164
Format * Movies1	31,668	1	31,668	16,623	,000	,105
Error	268,612	141	1,905			
Total	3648,000	145				
Corrected Total	515,062	144				

a. R Squared = ,478 (Adjusted R Squared = ,467)

Pairwise Comparisons

Dependent Variable: Mean_WOM

(I) Format	(J) Format	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
2D	VR	-2,263[*]	,232	,000	-2,722	-1,804
VR	2D	2,263[*]	,232	,000	1,804	2,722

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Pairwise Comparisons

Dependent Variable: Mean_WOM

(I) Movies1	(J) Movies1	Mean Difference (I–J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Crow: The Legend	Is Anna ok?	1,223[*]	,232	,000	,763	1,682
Is Anna ok?	Crow: The Legend	-1,223[*]	,232	,000	-1,682	-,763

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

3. Format * Movies1

Dependent Variable: Mean_WOM

Format	Movies1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
2D	Crow: The Legend	4,576	,204	4,174	4,978
	Is Anna ok?	2,406	,244	1,924	2,889
VR	Crow: The Legend	5,892	,227	5,443	6,340
	Is Anna ok?	5,617	,252	5,118	6,115

Annex D.12 *Regression analysis of WOM*

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin–Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,824[a]	,680	,675	1,07772	,680	150,728	2	142	,000	1,461

a. Predictors: (Constant), Mean_Empathy, Mean_Coolness

b. Dependent Variable: Mean_WOM

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	,5229	7,7681	4,6483	1,55932	145
Residual	-2,83571	2,30659	,00000	1,07021	145
Std. Predicted Value	-2,646	2,001	,000	1,000	145
Std. Residual	-2,631	2,140	,000	,993	145

a. Dependent Variable: Mean_WOM

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-,980	,361		-2,712	,008					
	Mean_Coolness	,843	,093	,531	9,026	,000	,762	,604	,429	,651	1,537
	Mean_Empathy	,407	,061	,390	6,631	,000	,704	,486	,315	,651	1,537

a. Dependent Variable: Mean_WOM

Correlations

		Mean_WOM	Mean_Coolness	Mean_Empathy
Pearson Correlation	Mean_WOM	1,000	,762	,704
	Mean_Coolness	,762	1,000	,591
	Mean_Empathy	,704	,591	1,000
Sig. (1–tailed)	Mean_WOM	.	,000	,000
	Mean_Coolness	,000	.	,000
	Mean_Empathy	,000	,000	.
N	Mean_WOM	145	145	145
	Mean_Coolness	145	145	145
	Mean_Empathy	145	145	145

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	350,133	2	175,066	150,728	,000[b]
	Residual	164,929	142	1,161		
	Total	515,062	144			

a. Dependent Variable: Mean_WOM

b. Predictors: (Constant), Mean_Empathy, Mean_Coolness

Histogram
Dependent Variable: Mean_WOM

Mean = −8,37E−16
Std. Dev. = 0,993
N = 145

Normal P–P Plot of Regression Standardized Residual
Dependent Variable: Mean_WOM
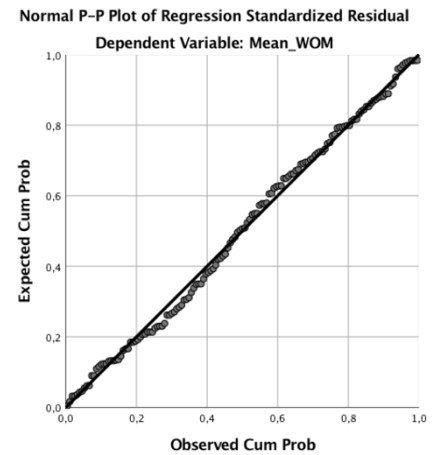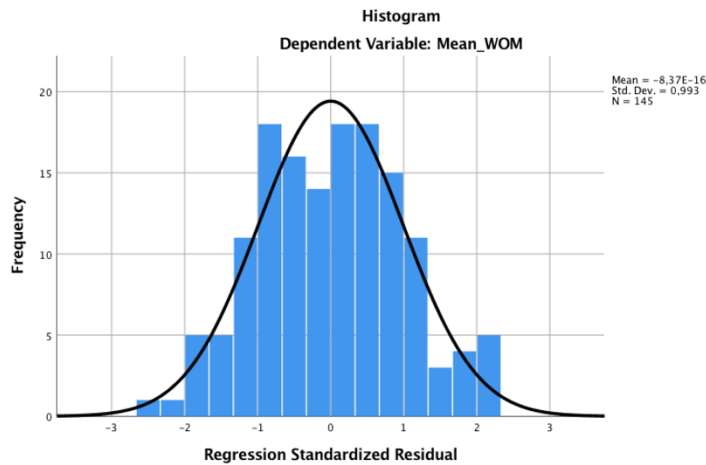
Annex D.13 *Regression Analysis of Brand Coolness*

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin–Watson
					Change Statistics					
1	,591[a]	,349	,345	,96500	,349	76,730	1	143	,000	1,436

a. Predictors: (Constant), Mean_Empathy

b. Dependent Variable: Mean_Coolness

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3,4001	5,7286	4,6455	,70442	145
Residual	−2,54050	3,08247	,00000	,96165	145
Std. Predicted Value	−1,768	1,538	,000	1,000	145
Std. Residual	−2,633	3,194	,000	,997	145

a. Dependent Variable: Mean_Coolness

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Partial	Part	Collinearity Statistics Tolerance	VIF
1	(Constant)	3,012	,203		14,839	,000					
	Mean_Empathy	,388	,044	,591	8,760	,000	,591	,591	,591	1,000	1,000

a. Dependent Variable: Mean_Coolness

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Correlations

		Mean_Coolness	Mean_Empathy
Pearson Correlation	Mean_Coolness	1,000	,591
	Mean_Empathy	,591	1,000
Sig. (1–tailed)	Mean_Coolness	.	,000
	Mean_Empathy	,000	.
N	Mean_Coolness	145	145
	Mean_Empathy	145	145

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71,454	1	71,454	76,730	,000[b]
	Residual	133,166	143	,931		
	Total	204,620	144			

a. Dependent Variable: Mean_Coolness

b. Predictors: (Constant), Mean_Empathy

Histogram
Dependent Variable: Mean_Coolness

Mean = 9,07E-16
Std. Dev. = 0,997
N = 145

Normal P–P Plot of Regression Standardized Residual
Dependent Variable: Mean_Coolness