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La influencia del boca a oreja electrócnica (eWOM) en las decisiones de consumo online

The influence of electronic word-of-mouth (eWOM) of consumers' online decisions

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LA INFLUENCIA DEL BOCA A OREJA ELECTRÓNICO (eWOM) EN LAS DECISIONES DE CONSUMO ONLINE

THE INFLUENCE OF ELECTRONIC WORD-OF-MOUTH (eWOM) ON CONSUMERS'

ONLINE DECISIONS

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DEDICATION

A María, mi Principito

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LA INFLUENCIA DEL BOCA A OREJA ELECTRÓNICO (eWOM) EN LAS DECISIONES DE CONSUMO ONLINE

Introducción

El boca a oreja electrónico (eWOM) es la fuente de información más importante que los consumidores consultan previo a la toma de decisiones en línea con el fin de reducir los riesgos inherentes a las compras por Internet.

La literatura sobre el eWOM se ha centrado en analizar las intenciones de compra, asumiendo éstas, como antecedentes de las decisiones de compra. Sin embargo, con las plataformas de comercio digital, es posible estudiar dichas decisiones en un contexto realista y con mayor control de las variables de estudio.

La aparición y desarrollo de las redes sociales y el comercio electrónico han significado un gran desafío y una revolución en la forma como las empresas realiza sus actividades de marketing y cómo estudian las necesidades y deseos de sus consumidores. Se enfrentan a un consumidor más informado, empoderado y que quiere asumir menores riesgos en sus decisiones de consumo, pero a la vez, está más dispuesto a compartir con otros sus experiencias y a imitar comportamientos de sus grupos sociales para sentirse aceptados y partícipes de estos. En este contexto, influyen y son influidos en sus decisiones de compra a través de las recomendaciones de producto o eWOM.

Esta investigación tiene como objetivo principal analizar las características del eWOM que son determinantes en las decisiones de consumo: valencia, tipo de producto y características del comunicador. En una primera fase, con un análisis bibliométrico de la literatura sobre eWOM, publicada entre 2010-2018, se estudió el mapa conceptual y teórico de esta temática. Como resultado del análisis anterior, se proyectó el diseño de tres experimentos 3 x 2 en una

tienda online, para someter a prueba las hipótesis del estudio respecto de la influencia del

eWOM en las decisiones de consumo en línea.

Resultados y Conclusiones

Los resultados evidenciaron la importancia del eWOM en la toma de decisiones en línea. En

primer lugar, se evidenció que el tema del eWOM ha constituido un tema de interés a nivel

académico y aplicado por constituirse en un nuevo medio de comunicación directo entre

consumidor y empresa.

Adicionalmente, respecto de las características del eWOM que tienen mayor influencia en la

toma de decisiones, se encontró que la valencia tiene una influencia diferencial dependiendo

de si el mensaje es enviado por un líder de opinión, o por otros consumidores y dependiendo

de, si es acerca de un producto o un servicio. Un mensaje negativo tiene mayor influencia en

las decisiones de compra de un servicio si el mensaje es enviado por otros consumidores

anónimos, mientras que un mensaje positivo tiene mayor influencia si es enviado por un líder

de opinión.

También se mostró evidencia empírica respecto de la mayor influencia del eWOM publicado

por consumidores anónimos que la generada por líderes de opinión. Esta conclusión, no solo

refuerza la importancia del estudio y la apropiada gestión de eWOM, sino que pone en

entredicho la común estrategia de las empresas de usar líderes de opinión para promover sus

productos. Más aún, a nivel académico, desafía el tradicional concepto de líder de opinión y la

forma de medir su influencia.

Los resultados de la investigación tienen implicaciones a nivel académico y aplicado en

tanto que permite agregar evidencia empírica del fenómeno eWOM y su influencia en las

decisiones de compra en línea. Se presenta evidencia de la importancia relativa de los líderes

de opinión en la recomendación de productos y se aportan nuevas líneas de investigación

sobre este tema que no solo es tendencia en el mundo académico, sino que está acaparando las miradas y recursos financieros de empresarios que buscan satisfacer a un consumidor digital menos leal y más empoderado.

Futuras investigaciones podrán evaluar el alcance y generalización de los resultados aquí aportados, incluyendo otros líderes de opinión, otro tipo de productos o servicios y otras formas de eWOM como valoraciones de los consumidores a través de estrellas o emoticonos, así como conversaciones en foros libres.

Difusión

En el proceso de difusión de los resultados de esta investigación se participó en el Coloquio doctoral del Congreso AEMARK en Sevilla, 2017; ponencia en el Congreso EMAC, Glasgow, U.K., 2018[i,] ponencia en XXX AEMARK, Universidad de Barcelona, España[ii].

Adicionalmente, se encuentran en proceso de evaluación 4 papers en revistas indexadas internacionales. El capítulo uno se encuentra sometido en la revista en Journal of Theoretical and Applied Electronic Commerce Research; el capítulo dos en la revista Journal of Retailing and Consumer Research; el tres en la revista Electronic Markets y el cuarto en la revista Journal of Advertising.

Por otra parte, se realizó una estancia de investigación en la Universidad de Westminster, Londres, U.K., (julio-octubre, 2018), que tuvo como resultado un paper que se encuentra en segunda revisión en la revista Decision Support Systems (Q1, JCR) y se tiene una ponencia aceptada en el Congreso EMAC, Hamburgo, Alemania, 2019[iii] y participación con una ponencia en el seminario" La gamificación: una herramienta para la docencia de métodos cuantitativos aplicados a las ciencias sociales" en la Universidad Complutense de Madrid, el 6 de noviembre de 2018.

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Palabras clave: *boca a oreja electrónico –eWOM-, comercio electrónico, decisiones de consumo en línea, valencia, tipo de producto, líder de opinión.*

ABSTRACT

Introduction

Electronic word-of-mouth (eWOM) is the most important source of information that consumers consult prior to making online decisions in order to reduce the risks inherent in online purchases. The literature on eWOM has focused on analyzing purchase intentions, assuming these, as a background to purchasing decisions. However, with digital trading platforms, it is possible to study these decisions in a realistic context and with greater control of the study variables. The emergence and development of social networks and electronic commerce have been a great challenge and a revolution in the way companies perform their marketing activities and how they study the needs and desires of their consumers. They face a more informed, empowered consumer who wants to take fewer risks in their consumption decisions, but at the same time, is more willing to share their experiences with others and to imitate behaviors of their social groups to feel accepted and share in them. In this context, they influence and are influenced in their purchasing decisions through the product or eWOM recommendations. The main objective of this research is to analyze the eWOM characteristics that are decisive in consumer decisions: valence, type of product and characteristics of the communicator. In a first phase, with a bibliometric analysis of the eWOM literature, published between 2010-2018, the conceptual and theoretical map of this subject was studied. As a result of the previous analysis, the design of three 3 x 2 experiments was projected in an online store, to test the hypothesis of the study regarding the influence of eWOM on online consumption decisions.

Results and conclusions

The results showed the importance of eWOM in online decision making. In the first place, it was evident that the theme of eWOM has been a topic of interest at an academic level and applied to become a new means of direct communication between consumers and companies.

Moreover, regarding the characteristics of the eWOM that have the greatest influence on decision making, it was found that the valence has a differential influence depending on whether the message is sent by an opinion leader, or by other consumers and depending on, if it is about a product or service. A negative message has a greater influence on the purchasing decisions of a service if the message is sent by other anonymous consumers, while a positive message has greater influence if it is sent by an opinion leader.

Empirical evidence was also shown regarding the greater influence of eWOM published by anonymous consumers than that generated by opinion leaders. This conclusion not only reinforces the importance of the study and the proper management of eWOM, but also calls into question the common strategy of companies to use opinion leaders to promote their products. Moreover, at the academic level, it challenges the traditional concept of opinion leader and how to measure its influence.

The results of the research have implications at an academic and applied level in that it allows adding empirical evidence of the eWOM phenomenon and its influence on online purchasing decisions. There is evidence of the relative importance of opinion leaders in the recommendation of products and new lines of research on this subject that not only is a trend in the academic world, but is monopolizing the looks and financial resources of entrepreneurs seeking satisfy a less loyal and more empowered digital consumer.

Future research may evaluate the scope and generalization of the results provided herein, including other opinion leaders, other types of products or services and other forms of eWOM, such as consumer ratings through stars or emoticons, as well as conversations in free forums.

Diffusion

In the process of dissemination of the results of this research, he participated in the doctoral colloquium of the AEMARK Congress in Seville, 2017; presentation at the EMAC Congress, Glasgow, U.K., 2018, presentation at XXX AEMARK, University of Barcelona, Spain.

Additionally, 4 papers in international indexed journals are in the process of being evaluated. Chapter one is submitted to the journal in the Journal of Theoretical and Applied Electronic Commerce Research; chapter two in the Journal of Retailing and Consumer Research; the three in the Electronic Markets magazine and the fourth in the Journal of Advertising.

On the other hand, a research stay was held at the University of Westminster, London, UK, (July-October, 2018), which resulted in a paper that is in second review in Decision Support Systems magazine (Q1, JCR) and there is a paper accepted at the EMAC Congress, Hamburg, Germany, 2019 and participation with a presentation at the seminar "Gamification: a tool for teaching quantitative methods applied to social sciences" at the Complutense University of Madrid, on November 6, 2018.

INTRODUCTION

The emergence of electronic commerce and social media has meant a revolution in commerce and marketing with outstanding effects: Transaction cost reduction, direct communication business-consumers, consumer empowerment, and an unlimited quantity of options. But it has also meant an increase of risk for consumer decision too [1, 2, 3]. One way for consumer to manage his risk is by increasing their use of online reviews generated by other consumers to make their own consumer decisions [4, 5].

According to Global Web Index [6] the most important online sources that consumers use when they are looking for information about brands, products or services are search engines (50%), consumer reviews (34%), social networks (32%), and product/brand sites (21%), etc. Also, according to a US survey [7], 90 percent of consumers read online reviews before visiting a business, and 88 percent said they trusted online reviews as much as personal recommendations. Twenty-six thousand three hundred eighty (26,380) consumer reviews are being posted every minute, and 56 percent of consumers said they read between two and six consumer reviews before trusting a business [8].

In that context, consumer decisions are being influenced by Electronic Word of Mouth (eWOM) that other consumers have freely generated through social media [9]. However, the level of that influence is affected by consumer's characteristics, such as product knowledge, product involvement, and product type. Moreover, it depends on the kind of platform where it is shown, and for the direction of eWOM [10].

There is empirical evidence to support that personal characteristics like gender [11]; involvement [12, 13, 14]; consumer knowledge [15], and attitude [4] of social media users have a

moderate influence on eWOM information and purchase intentions. However, there is no evidence regarding the importance that a consumer's role in a social network, such as a leader or seeker tendency has on posted or followed eWOM. It would be necessary to study these factors, because it is most likely that consumers tend to check on other consumers' reviews, and be influenced by them, if he or she has a follower tendency as well as if they are opinion leaders in a specific product category [16, 17, 18].

Another variable that has been extensively studied is the **eWOM valence** and its influence on purchase decisions. It has been classified as positively framed eWOM versus negatively framed eWOM. "Positively framed eWOM highlights the strengths of a product/service and encourages people to adopt a product/service, while negative framed eWOM emphasizes the weaknesses/problems of a product/services and thus discourages people to adopt them" [10, p. 464]. There is evidence that negative eWOM has a stronger influence than positive eWOM on purchase intentions, especially on its dissemination [19, 20, 21, 22]. But there has been very little interest in the study of positive eWOM's influence on purchase decisions.

Another variable that influences the effect of eWOM on purchase decisions is the **product type** [23]. According to Armstrong & Kotler [24], there are two types of products: goods and services. Depending on the possibility that the consumer has to interact with the product before purchasing it, it is classified as an experience product or a search product [25]. Studies strongly suggest that the consumer is more influenced by eWOM when the product they are buying is an experience product type as opposed to a search product. In general, that kind of product represents a higher-risk choice for the consumer [26, 23]. However, in the context of e-commerce, since all products are "experience products" because the consumer cannot interact with the product directly before

he or she chooses it, it is necessary to study how the product nature can affect the online

consumer decisions.

Another factor that influences the source credibility of eWOM is the **platform** where it is

posted. In that case, the reliability of the source would be related to the relative independence of

the sender and his/her motives for sending it. Kiecker & Cowles [27] classified four types of

communications: spontaneous, quasi-spontaneous, independent (the third party sponsored) and

corporate sponsored. Tsao & Hsieh [23] re-classified these four types, reducing in two categories:

corporate and independent. Corporate platforms can be defined as "communication involving

consumer reviews posted on product marketing enterprise websites (…)" whereas independent

platforms are "public online forums where people with similar interest or expertise gather without

the intention of performing monetary transactions" [23, p. 515].

There is overwhelming evidence of platform influence on purchase decisions. Tsao et al. [23]

found that platforms have a moderate impact on purchase intentions but not a direct influence;

however, Cheung et al., [28] and Truong and Simmons [29] found that independent platforms are

more credible for the consumer, than corporate platforms.

Considering the above issues, the main objectives of this research are fourfold:

1. To make a systematic review of eWOM literature to establish main themes and theoretical
   structuration.
2. Analysis of the influence of eWOM on online consumer decisions according to valence
   and product type.
3. Study if the eWOM sender (OL) has a differential influence on online consumer decisions.
4. Determine which source or information is more credible for consumer online decisions:
   OL recommendation or Online Consumer Reviews.

This research was divided into four chapters, one for each research objective. Fist, a bibliometric was done with the literature more relevant reported in Scopus and Web of Science about eWOM published between 2010 and 2018. For the analysis, the SciMAT tool was used to manage the significant volume of papers about this subject.

The second chapter, an experiment field was designed to test the hypotheses about eWOM' valence and product type influence on online consumer decisions.

The third chapter corresponds to the second experiment where the hypotheses about eWOM' sender characteristic (OL) was tested. Part of the results was presented as a paper in EMAC Conference in Glasgow (U.K.) in May 2018.

The four chapter present the results to analyze the relative influence of OL and OCR on online consumer decisions. The result of this experiment was presented as a paper in AEMARK Conference in Barcelona (Spain) in September 2018.

At the end, the general conclusions of the research are formulated, and a Spanish summary is provided.

CHAPTER ONE:

The electronic word of mouth (eWOM) phenomenon: a bibliometric analysis

1.1 Introduction

Electronic word-of-mouth (eWOM) has become an essential medium of communication due to social media and electronic commerce. Traditionally, the most critical variables to analyze for practitioners and researchers about consumption influence was the marketing mix (4 p's). However, with the information revolution, the focus has shifted to the consumer, or more specifically, to the electronic consumer [30].

Since 2010, there has been a dizzying increase in the amount of literature about eWOM, and it has become one of the most relevant concepts in marketing research. According to Scopus and Web of Science (WoS) datasets, for this period, 1,570 papers had the descriptor eWOM. The growing demand for this topic can be explained by researchers' interest in understanding the consumer online communication influence on the behavior of others [31, 32] and for the businesspeople who were overwhelmed by their consumers' comments via social media or on the company's website [33, 34].

According to Global Web Index [6] the most important online sources that consumers use when they are looking for information about brands, products or services, are search engines (50%), consumer reviews (34%), social networks (32%), and product/brand sites (21%). Also, according to a US survey [7], 90 percent of consumers read online reviews before visiting a business, and 88 percent responded that they trusted online reviews as much as personal recommendations. Twenty-six thousand three hundred eighty consumer reviews are being posted every minute, and 56 percent of consumers said they read between two and six consumer reviews before trusting a

business [8]. In that context, consumer decisions are being influenced by eWOM that other consumers have freely generated through social media [9, 36, 31].

Despite the recent growing interest in eWOM, there is not a bibliometric analysis of this subject. Recently, systematic reviews and meta-analysis have been implemented to determine the scope of eWOM influence on online consumer decisions. For example, Babic et al. [36] concluded that eWOM has control of sales; Serra-Catallops and Salvi [37] showed that the literature about eWOM are focus in analyze the eWOM determinats and eWOM impact on online consumer decision in booking hotel context, and Cheung and Thadani [10] found that eWOM impact attitudes, intentions, and purchase behaviors; however, these researches did not show the overview of eWOM literature to understand its conceptual and theoretical structure and evolution until today.

Therefore, it is necessary to analyze the evolution of the concept to determine which the major topics are and the most frequently cited papers and authors using a bibliometric methodology. A longitudinal approach that incorporates all different variables and theoretical perspectives about the eWOM phenomenon and their interaction over time would provide a useful analytical framework for understanding the influence of eWOM on online consumer decisions and for identifying new research avenues about this topic.

Bibliometric is "a set of methods used to study or measure texts and information, especially in big datasets (...), to explore the impact of a field, a set of researchers or a particular paper" [38, p. 146]. This methodology is useful in analyzing the structure and content of a subject, including a large mass of data [39].

Using SciMAT (Science Mapping Analysis Software Tool) and VosViewer software's, a bibliometric analysis of literature published between 2010 and 2018 about eWOM and reported in Scopus and WoS databases was completed. The results of this research are useful for researchers to design new studies about this form of communication and for practitioners, to understand the eWOM phenomenon and design strategies on digital marketing according to the nature of this online consumer-generated content.

1.1.1 eWOM

eWOM is "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" [40, p. 39]. Since its seminal studies, the concept of eWOM has evolved and is now considered to be a form of communication via the internet for consumers to post complaints, share experiences with products or services, and recommend brands. In this way, the consumer has the power to influence and be influenced by other consumers about their consumer decisions [41, 42, 43].

Literature reports that one characteristic of a credible source of eWOM is the platform where it is posted [44, 45]. In this case, the credibility of the source would be related to the independence of the sender and his/her motives for sending it [23]. Kiecker & Cowles [27] classified four types of communications: spontaneous, quasi-spontaneous, independent (third-party sponsored) and corporate sponsored. Tsao & Hsieh [23] re-classified these four types and reduced them to two categories: corporate and independent. "Communication involving consumer reviews posted on product marketing enterprise websites are called corporate platforms, (…)" and "public online

forums where people with similar interest or expertise gather without the intention of performing monetary transactions are called independent platforms" [23, p. 515].

Another variable that has been extensively studied is the eWOM valence and its influence on purchase decisions [46]. Valence has been classified as positively framed eWOM versus negatively framed eWOM. "Positively framed eWOM highlights the strengths of a product/service and encourages people to adopt a product/service, while negatively framed eWOM emphasizes the weaknesses/problems of a product/services and thus discourages people from adopting them" [10, p. 464]. There is evidence that negative eWOM has a stronger influence on purchase intentions than positive eWOM, especially upon its dissemination [19, 47, 21, 22].

Another variable that will influence the effect of eWOM on purchase decisions is product type [23]. According to Armstrong & Kotler [24], there are two types of products: goods and services and depending on the possibility that the consumer has to interact with the product, before purchasing it, they are classified as an "experience" goods or search goods [25]. There is strong evidence that the consumer is more influenced by eWOM when the product they are buying is an experience product type as opposed to when it is a search product one. In general, a search product represents a higher choosing risk for the consumer [26, 23].

For these reasons, it is necessary to analyze the evolution of the concept to determine which the principal topics are and the most frequently cited papers and authors using a bibliometric methodology. We believe that a longitudinal approach that incorporates all different variables and theoretical perspectives about eWOM' phenomenon and their interaction over time would

provide a useful analytical framework for understanding the influence of eWOM on online consumer decisions and for identifying new researches about this topic.

Bibliometric is "a set of methods used to study or measure texts and information, especially in big datasets (…), to explore the impact of a field, a set of researchers or a particular paper" [38, p. 146]. This methodology is useful in analyzing the structure and content of a subject, including a large mass of data [48].

We used SciMAT (Science Mapping Analysis Software Tool), software to complete a bibliometric analysis of literature published between 2010 to 2018 about eWOM and its influence on online consumer decisions in the highest ranked papers according to the JCR and Scopus indexes.

Our primary goal is to answer three main research questions:

1. How has the concept of eWOM and its influence on online consumer decisions evolved?

2. What are the most relevant papers, journals, and topics regarding the influence of eWOM on online consumer decisions?

3. What are the trends in eWOM research and what are the main avenues of research in the future?

1.2 Methodology

This section presents the methods for search, select, collect, and analyze the papers that were included in the bibliometric analysis.

1.2.1 Sample

The sample selection followed the PRISMA methodology [49] with five steps:

1. The universe: the universe is the term used to describe all of the papers or conference papers published in journals that have been peer-reviewed. They are also indexed and are a part of the Scopus of Web of Science Datasets.

2. Then, we segmented the results by searching for papers with a subject (TS) that included one of the following combinations. We searched Scopus and the Web of Science (WoS) databases between 2010 and 2018 for: "*TS= (eWOM) OR TS= ("Online reviews") OR TS= ("Online recommendation") OR TS= (eWOM AND "Consumer online decisions").*

3. That search produced 159 papers on Scopus and 48 on WoS. Then, after filtering out duplicate papers, the final sample was 153 papers (127 Scopus and 26 WoS). Then, the abstracts and the reference information on the papers were downloaded in a .csv format and imported to the SciMAT tool for bibliometric analysis.

4. Exclusion criteria: no marketing context, no empirical research, no peer review publications, and not having been written in the English language.

5. Manual revision for each title and abstract was done to corroborate that the papers met the inclusion criteria: empirical research focused on the marketing, tourism and services context and studies that examined the influence of eWOM on online consumer decisions.

1.2.2 Instruments

The bibliometric analysis was performed using SciMAT, an open source software tool developed to create scientific mapping analysis under a longitudinal framework [39], and VosViewer.

1.2.3 Measures

We conducted a study of publication performance according to publication output, author, keyword, and content analysis in order to establish the evolution of the concepts in the field by applying a co-occurrence and co-word analysis [38, 50].

The goal of the performance analysis was to evaluate the citation impact of scientific literature about a subject. It provides a detailed accounting of the growing body of research about a given subject and reveals which authors and papers are the most important, as well as how the research during a specific period increases or decreases.

The content analysis shows the conceptual structure and the evolution of scientific production. It shows the central, isolate, emergent and fundamental themes on an accurate map. In order to create this map, we performed a co-word and co-occurrence analysis. The parameters were as follows: the keywords were used in at least three papers (co-word), and those words appeared together in more than two papers (co-occurrence) [38].

The data is mapped out on a Cartesian plane where the X-axis indicates the centrality and the Y-axis indicates the density of the keywords that make up the set of analyzed literature. According to Cobo et al. [39], in this map, they represent the motor themes (upper right quadrant), peripheral themes (upper left), emerging or decadent (lower left) and fundamental (lower right).

The motor themes are characterized by having high centrality and density, meaning they are well-developed and essential subjects in the field of study. The isolated themes have high centrality, but low density; that is, they are very specialized topics, but isolated or marginal to the subject of study. Emerging issues have low centrality and low density, so they may be themes

that have appeared previously, but that requires development and, therefore, constitute possible

research opportunities, or they may be topics that have already been studied. Finally, the

underlying themes have high centrality and low density [39].

In the same way as Castillo-Vergara et al. [51] and Murgado-Armenteros et al. [52], we utilized

SciMAT, a science mapping analysis tool that is frequently used for performing bibliometric

analysis in the field of marketing research.

1.3 Results

The results of a bibliometric analysis with SciMAT and VosViewer are presented in two

sections: Perform analysis and Content analysis. The former shows the publication trends, main

authors, countries of research origin, and papers. The latter presents the conceptual and

theoretical structure of eWOM literature.

1.3.1 Performance analysis

With the emergence of Social Networking Sites (SNS) and the explosion of the use of mobile

internet, eWOM has become an interesting subject. Historically, marketing has studied the effect

of influence between consumers through WOM, but this type of interaction is limited to friends

and family. Today, eWOM allows for interaction between individuals (some of whom may even

be strangers) over an extended social network and is, therefore, an important variable to include

in the marketing mix [53].

Before 2010, eWOM literature focused on analyzing why people engage in commenting on SNS

products or services and how the message is shared or becomes viral. This literature, along with

the more relevant paper from Hennig-Thurau et al. [40], opens up a new area of study, to analyze

eWOM as a form of communication produced by consumers for other consumers. After 2010, the research began to analyze the influence of eWOM on consumer intentions because these consumer communications became the most important source of information that consumers searched for before making purchase decisions [10].

  Between 2010 and 2018, WoS and Scopus report 153 research papers regarding the influence of eWOM on online consumer decisions and they are classified by subject into Business Economics (52.4%), Computer Science (31.1%), Information science (14.7%), and Social Science and other topics (1.8%) (See Figure 1.1).
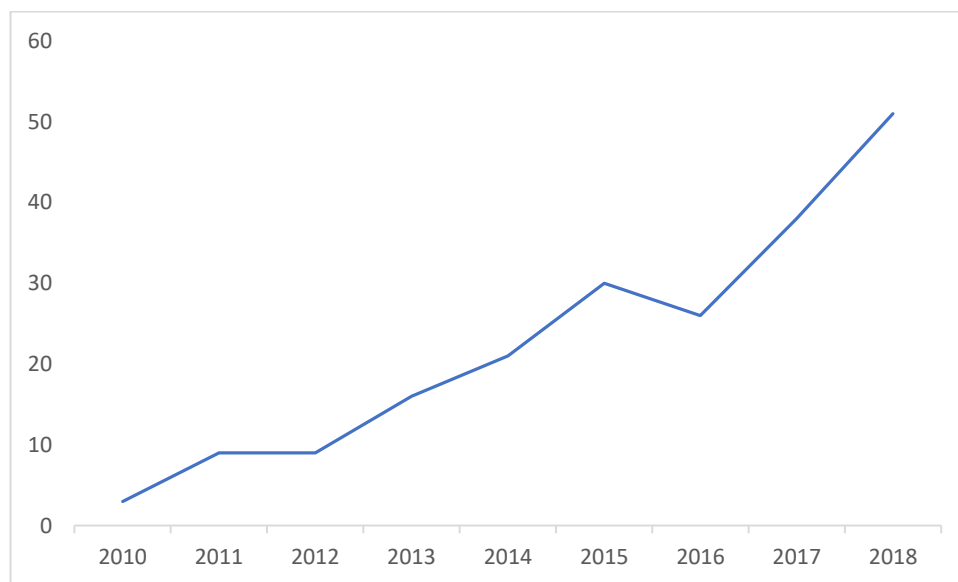
Figure 1.1. eWOM publishing performance 2010-2018 (Scopus and WoS

Figure 1.2 represents the publishing performance by country of the first author. The United States is the country with the highest rate of papers published regarding eWOM and its influence on online consumer decisions with 54 papers. It is followed by China (42), Taiwan (15), United Kingdom (10), Spain (10), India (10) and Germany (9).
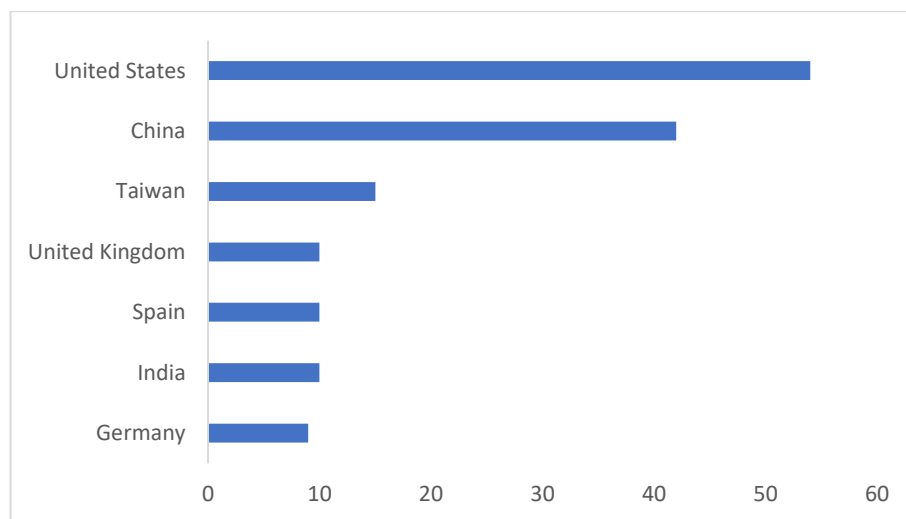
Figure 1.2. Publishing performance by country. Source: WoS and Scopus (2018)

1.3.2 Content analysis

After grouping words with the same meanings and deleting the irrelevant ones, we normalized the data and analyzed the 153 papers using the SciMAT tool and the corresponding 680 keywords. Three periods were analyzed: first, the results of all eight years together (2010-2018); then we divided the data into two separate sub-periods 2010-2014 and 2015-2018 since the

publishing rate increased significantly after 2014. With that distribution, we obtain the following

conceptual map represented in VOSviewer (See Figure 1.3).
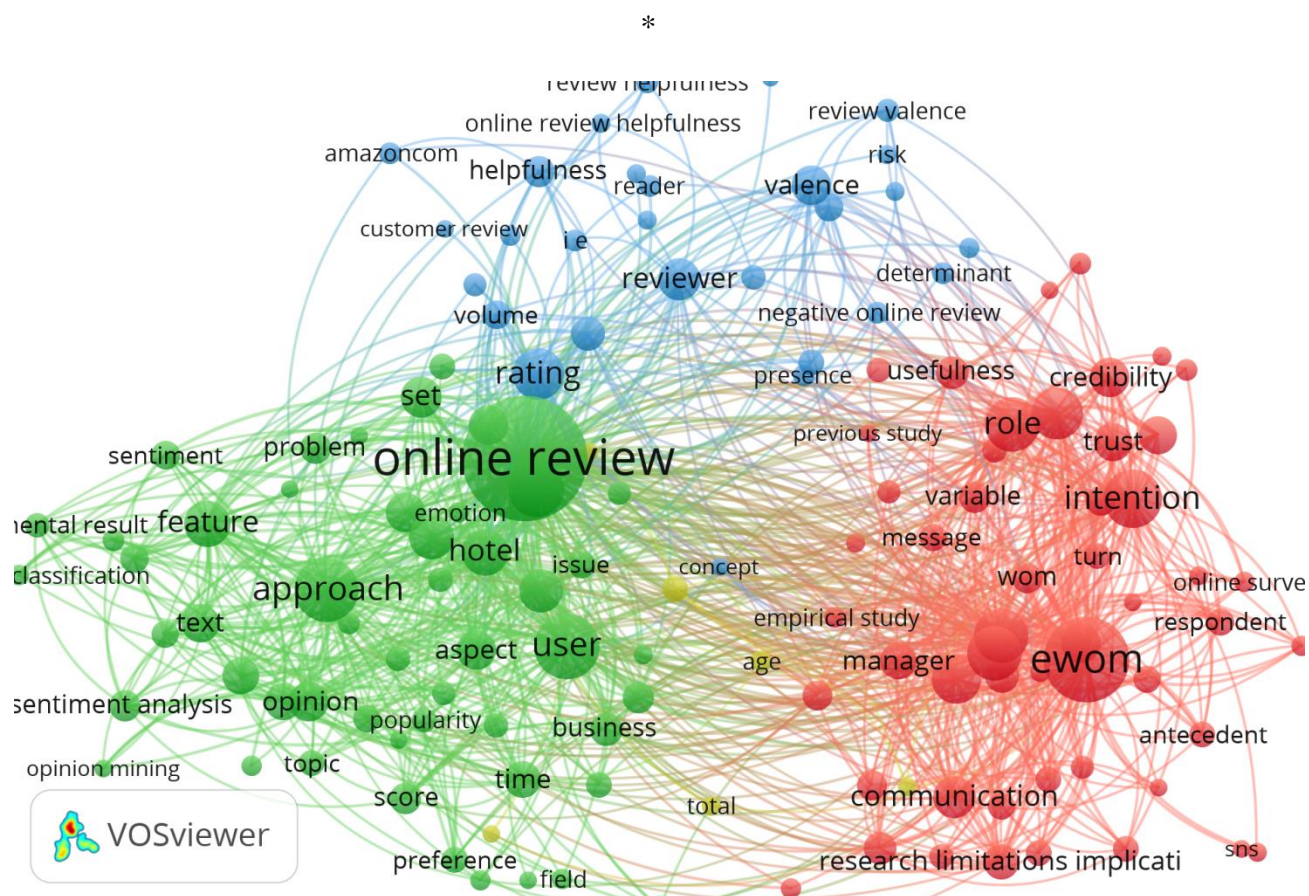
Figure 1.3. Conceptual map VOS viewer representation

If we analyze only Period 1, we observe that the central themes are "consumer purchase

decisions", "communications", "countries", "experimental design", "cognitive psychology", and

"websites". However, by dividing Period 1 into two sub-periods, more specific information was

obtained. During Sub-period 1 (2010-2014), the most prevalent themes were "online communities", "product aspect", "eWOM", and "sales". In Sub-period 2 (2015-2018), the most prevalent themes were "interpersonal influence", "electronic commerce", "internet", and "human".

(a)
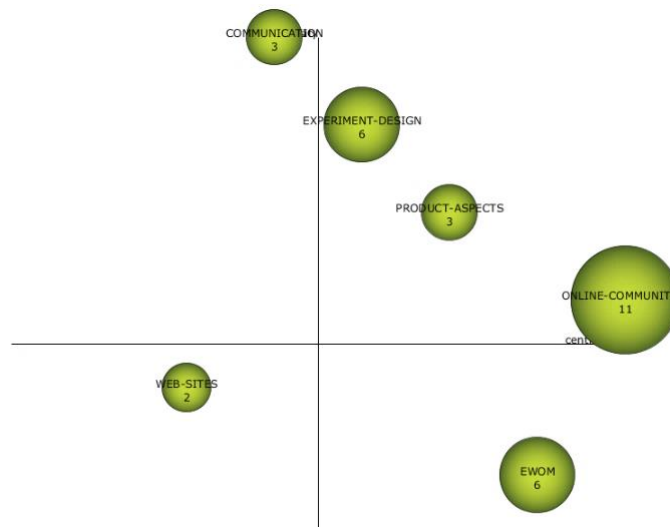
(b)
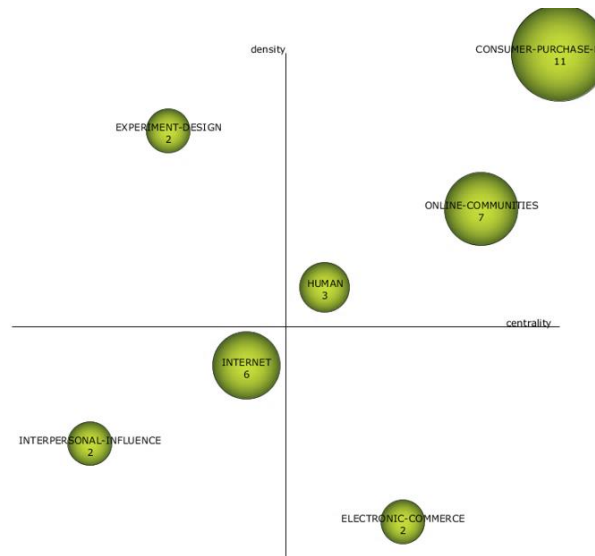
Figure 1.4. The strategic diagrams. (a) Sub-period 1 (2010-2014). (b) Sub-period 2 (2015-2018)

According to Cobo et al. [38], the upper-right quadrant of the strategic diagram represents the "major topics" because they present strong centrality and high density. Figure 1.4 (a), shows that "online communities", "experimental design" and "product aspect" were the most important topics in the literature on eWOM and COD between 2010 and 2014. The upper-left quadrant has "well-developed internal ties but unimportant external ties" indicating that, in this case, "communication" is the specific theme that was studied in the first sub-period. The lower-left quadrant shows "websites", indicating that they have become less relevant with the emergence of SNS, and online communities, and tend to be displaced. Lastly, the lower-right quadrant shows that "eWOM" is an important topic but is not yet fully developed.

Panel (b) of Figure 1.4 represents Sub-period 2 (2015-2018). For this period, key issues were: "consumer purchase decisions", "online communities" and "human". The upper-left quadrant, as

a specific theme, shows "experiment design". The lower-left quadrant presents "internet" as a disappearing theme and "personal influence" as an emergent one. In the lower-right quadrant, we see "electronic commerce", which is an important theme that has not yet been studied.

1.3.3 Main themes

The main themes for centrality (Table 1.1) are "consumer purchase decisions, online communities and, electronic commerce". Then, the literature about eWOM has been centered on the analysis of eWOM influence on consumer decisions and, most of the time, the interaction between online communities such as social network sites and electronic commerce [54].

Table 1.1 Cluster information.

Name	Centrality	Centrality range	Density	Density range
CONSUMER-PURCHASE-DECISION	186.32	1	67.54	1
ONLINE-COMMUNITIES	120.08	0.86	34.64	0.71
EXPERIMENT-DESIGN	67.32	0.29	41.36	0.86
HUMAN	82.34	0.57	31.86	0.57
INTERNET	76.35	0.43	21.38	0.43
ELECTRONIC-COMMERCE	106.57	0.71	7.32	0.14
INTERPERSONAL-INFLUENCE	59.45	0.14	9.69	0.29

Source: result analysis with SciMAT.
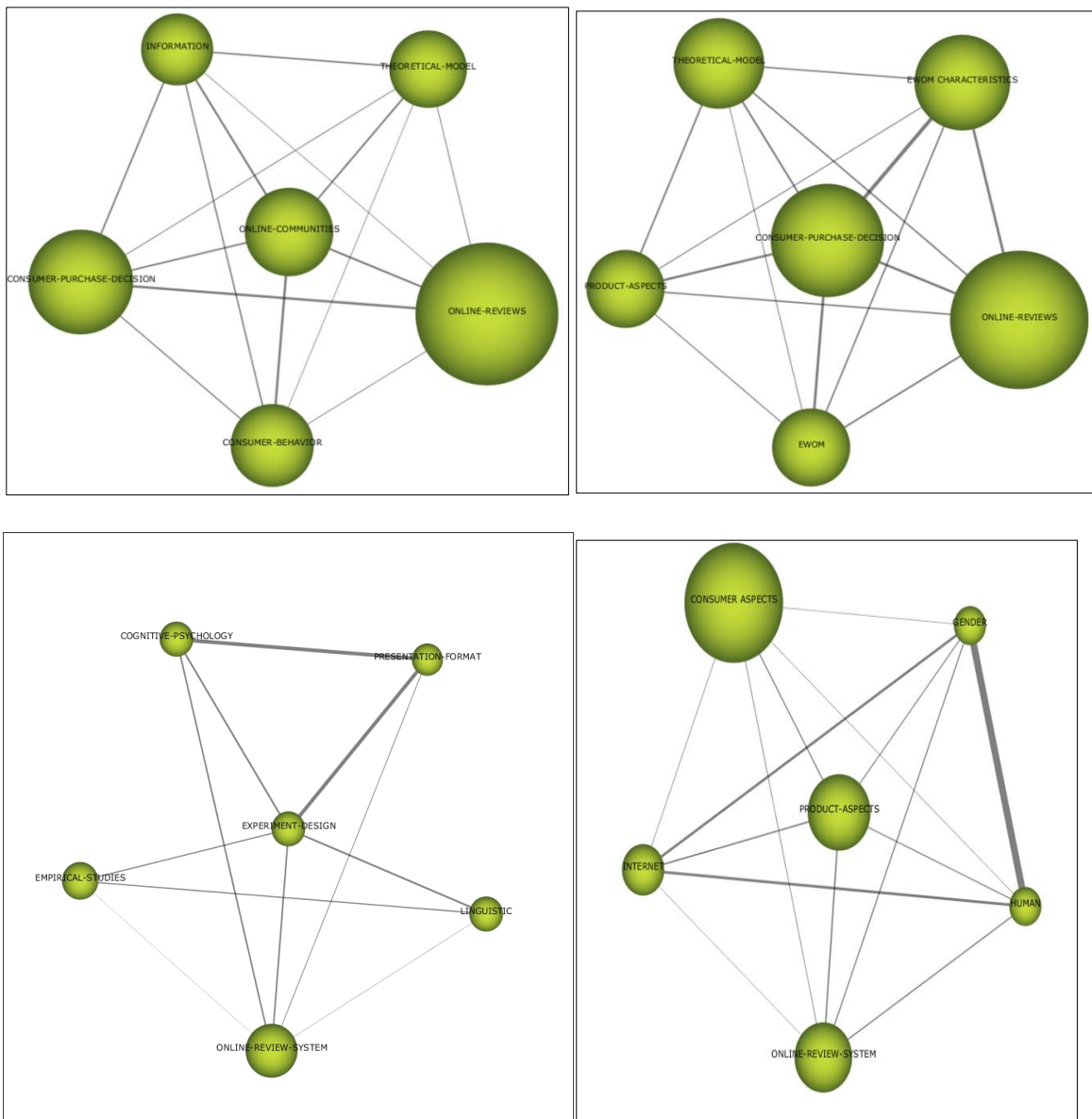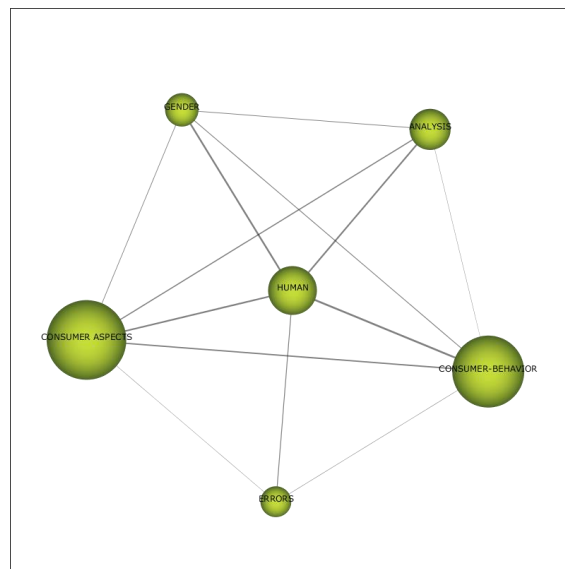
Figure 1.5 Cluster's network motor themes.

The most central theme (Figure 1.5) was "online communities", which is related to "online reviews", "consumer purchase decisions", "consumer behavior", "information" and "theoretical model". Facebook and Twitter were the most studied social network sites, but other online communities were also analyzed, such as TripAdvisor because it is a source of tourism information – and, in comparison, to other goods and services, consumers tend to check reviews of tourist destinations and hotels more frequently before making a purchase [23].

In this period, research shifted its focus to the analysis of eWOM's influence on purchase decision as opposed to purchasing intention, as was studied previously [10]. The number of sales was another variable that was included in the analysis because studying whether eWOM could change consumer behaviors is more important than analyzing the influence on attitudes or purchase intentions [36].

Figure 1.5 represents the topics related to "consumer purchase decisions". It is the theme with the highest centrality for Sub-period 2 and is related to "online reviews", "eWOM characteristics", "product aspects", "eWOM" and "theoretical model". The online consumer reviews are the type of eWOM that have a more significant influence on online consumer decisions [3]. This new way of communication between consumers becomes an indispensable source of information before making decisions and has given researchers a new variable to study.

Most of the time, online reviews are related to product' aspects such as functionality, product experience, and whether it is tangible or intangible. According to the literature, the most relevant eWOM characteristics are valence, quality, and sender [36, 10, 55].

1.3.4 Emerging themes

The themes that are not studied enough are (Figure 1.6): "interpersonal influence", "electronic commerce" and "websites".

The interpersonal influence theme addresses, from a psychological perspective, how one person can influence the attitude or behavior of another. This construct has been studied primarily as a mediating variable, but the emerging theme is the study of the influence of an opinion leader or celebrity on online consumer decisions [56]. According to Global Web Index [6], people tend to follow the lead of celebrities and imitate their consumer behavior.

The eWOM influence on consumer decisions, in the context of e-commerce, becomes relevant as a way of reducing consumer risk decisions. While e-commerce is becoming a more and more common way to shop, for consumers, the lack of interaction with the product or service before

purchase makes it a risky decision. Therefore, understanding the way that consumers manage this risk is imperative for marketing managers. Additionally, related to e-commerce is the theme of "websites", which is the platform on which consumers review information to help make purchase decisions and where they post their consumer experience. In this way, the website plays a vital role in the consumer shopping experience and is an important variable to analyze.
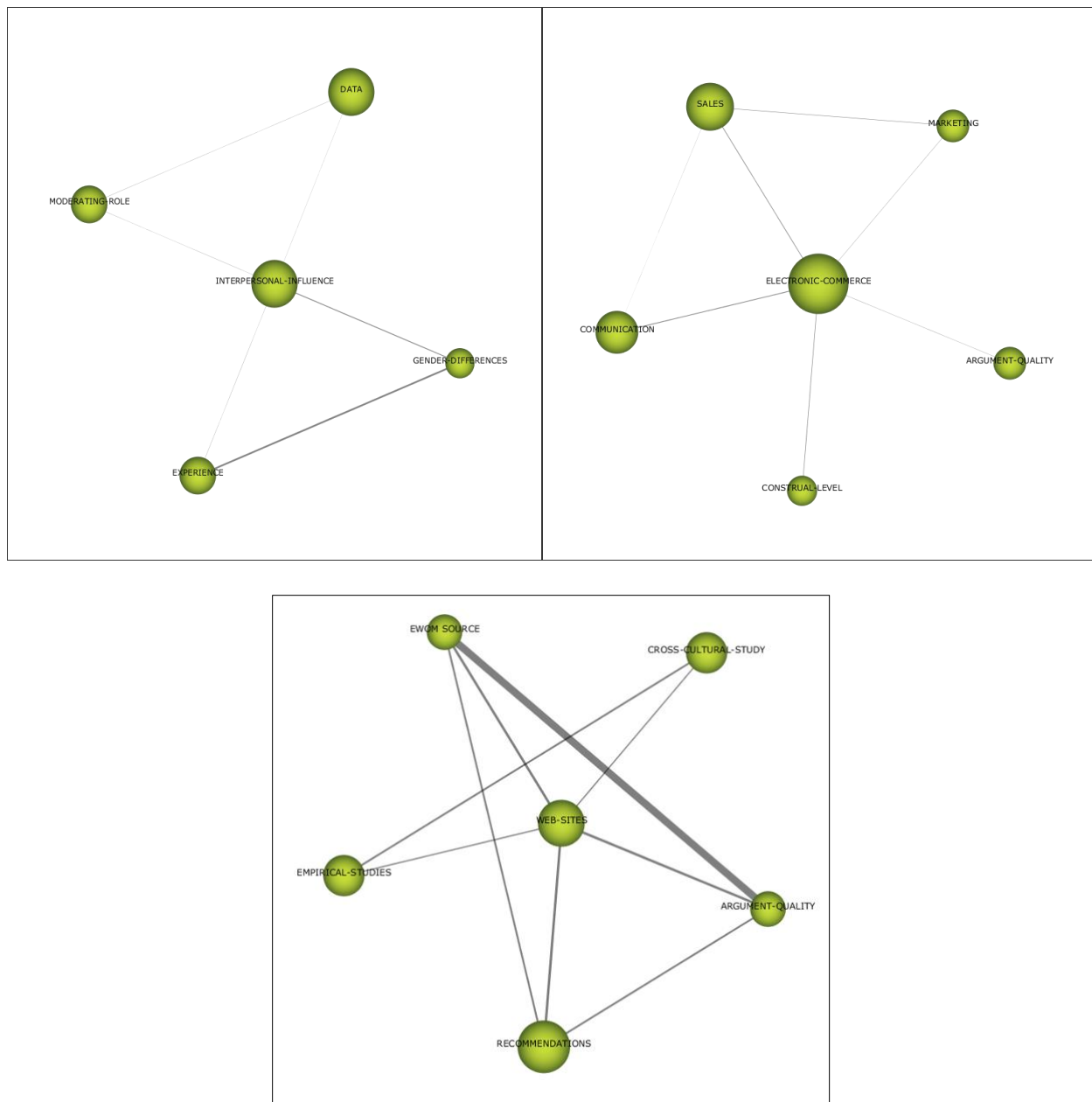
Figure 1.6. Emerging themes.

1.4. Conclusions and Discussion

This study analyzes the literature on eWOM influence on consumer purchase decisions and reports the most relevant and frequently cited studies according to Scopus and Web of Science between 2010 and 2018. We completed a bibliometric analysis of performance and content using the SciMAT tool. For a more specific analysis, the period was divided into two sub-periods, 2010-2014 and 2015-2018, which allowed us to understand the evolution of the subject.

Between 2010 and 2014, the most relevant theme was the online community (Figure 1.4a) that was created by Social Networking Sites or free forums on the websites. These communities became an important virtual space where people talk about preferences, feelings, and hobbies and, for researchers, it is a new context in which to analyze human behavior. According to Global Web Index [6], more than 80 percent of internet users have an account on Facebook, and people spend more than two hours per day on social media.

The topic "online communities" was associated with "online reviews", which is a form of eWOM and an essential source of information that consumers take into account before making purchase decisions [58, 59, 60, 61, 62, 63].

In the economic context, 80 percent of internet users between the ages of 25 and 34 purchased at least one product online in the last month and 75 percent said they check consumer reviews before purchasing a product or service [57]. This phenomenon explains the change in research for the period from 2015 to 2018, in which the focus shifted to the analysis of consumer purchase decisions (Figure 1.4b) and eWOM influence on online consumer decisions [36, 64].

The keyword "consumer purchase decisions" was associated with eWOM characteristics, such as valence [65, 66], quality [61], source credibility [67], and products characteristics, such as goods or services [23]. The eWOM valence is the direction of the consumer message, whether it is positive or negative, and, while its influence on consumer decisions is not completely clear, most of the time negative eWOM is more persuasive than positive [21, 47]. The eWOM's quality and source credibility are related to the persuasiveness of the message.

Additionally, this research shows that the most frequently used methodology was experimental design and mostly online experiment [68, 23]. However, the majority of the research designs continue to be based on surveys.

The most frequently used theoretical models were Elaboration Likelihood Model [69, 70, 71, 41, 72], Dual Process Theory [64, 73, 74], and Information Processing Theory [75].

1.5 Tendency and future avenues of research in eWOM

The analysis shows that two topics have been insufficiently studied: personal influence and eWOM influence in electronic commerce. The consumer tends to follow opinion leaders or celebrities and reads their recommendations before making purchase decisions [76, 77, 78]. Although literature shows that opinion leaders are influencers and create a great message spread [79, 80, 53, 81], it is still necessary to study whether or not they have a real influence on consumer purchase decisions and how credible is opinion leaders' eWOM [82, 83].

eWOM is related to e-commerce because, today, consumers are more frequently purchasing products and services online and they tend to both use and produce consumer information that

helps themselves and others to make online consumer decisions [84, 36]. This scenario presents

an auspicious future for more research on consumer behavior using Big Data methodologies.

The results of this bibliometric analysis were the input for the design and implementation of the

methodological designs that make up the following chapters. This sought elucidation, empirically

if the eWOM has influence on the decision to purchase online. If the valence and the type of

product have influence and, finally, if the eWOM generated a leader of opinion is more

influential than that generated by anonymous consumers.

CHAPTER TWO:

The Influence of Electronic Word-Of-Mouth (eWOM) on Online Consumer Decisions

2.1 Introduction

The emergence of electronic commerce and social media has meant a revolution in commerce and marketing with outstanding effects: Transaction cost reduction, direct communication business-consumers, consumer empowerment, and an unlimited quantity of options. But it has also meant an increase of risk for consumer decision too [1, 2, 3]. One way for consumer to manage his risk is by increasing their use of online reviews generated by other consumers to make their own consumer decisions [4, 5].

The eWOM, as a communication system, has become a revolution for both consumers and practitioners insofar as it has shortened the distances between these two agents and has increasingly empowered the consumer by attributing greater capacity to influence and be influenced by other consumers through social networks or in free forums on the Internet [84, 39].

According to the Global Web Index [6], 24,654 product recommendations are being produced every minute on the Internet, and according to a study conducted in the United States [85], 1 in 5 people report consulting and believing in this type of communication more than in traditional media to make decisions about online consumption.

On the other hand, according to the literature review on eWOM, carried out by Cheung and Thadani [10], there is a growing interest among academics to analyze how this type of communication influences purchasing attitudes and intentions. Likewise, Babic et al. [36] made a meta-analysis to establish if the eWOM has an influence on sales. The results allowed us to

conclude that the eWOM not only influences attitudes towards a product, but also influences the sales volume of the associated products.

The literature reports certain eWOM characteristics that are determinant of its influence on consumer decisions, among the most relevant are the valence of the message, the type of product and the characteristics of who makes the recommendation.

Regarding the valence or polarity of the message, the literature is divided between those who have found that positive messages have greater influence [19] and those who affirm that negative messages are not only disseminated more quickly, but are the ones that have the greatest impact has in the intentions of buying a product or service [46, 21, 22].

Regarding the type of product, Tsao et al. [23] has reported empirical evidence that services are more vulnerable to consumer comments due to their intangibility and inability to know each other prior to their purchase. However, bearing in mind that with e-commerce platforms every product becomes an intangible asset, while it cannot be proven before making its purchase, it is necessary to establish which of these two types of goods are most influenced by the product comments that consumers make in digital media.

The characteristics of who consult this type of communications has been another variable of interest in the eWOM literature. A consumer with a marked tendency to be a follower, according to the terms of Flynn et al. [16] is more likely to be influenced by product recommendations than a consumer with a tendency to be an opinion leader.

Finally, the characteristics of who makes the product recommendation is another determinant of its influence on consumer decisions. Tsao et al. [23] found that platforms have a moderate

influence on purchase intentions but not a direct influence; However, Tsao et al. [23] and Truong & Simmons [29] found that independent platforms are more credible for the consumer than corporate platforms. This study analyzes whether the recommendations made by anonymous consumers have an influence on the purchase or not of products and services.

Considering the above issues, the primary objectives of this research are threefold:

1. Analysis of the influence of eWOM valence (positive or negative) online purchase decisions.

2. Analysis of the influence of eWOM according to the product type (product versus services) on consumer purchase decisions.

3. Analysis of the regulating role of consumers' characteristics (leadership/ follower tendency) in the relationship between eWOM influence and online purchase decisions.

2.2.2 Literature review and theoretical framework

eWOM is defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the internet" [39, p. 39].

Research about the influence of eWOM on purchase decisions had been classified into five perspectives: stimuli, responses, communicators, receivers and contextual factors [10], and more recently, the interest of researchers has been increased for the study of the influence of consumer' psychological characteristics as moderator variable between eWOM and online purchase intentions.

2.2.1 Sender or communicator

The more important topic on the eWOM' communicator is about his/her credibility and usefulness. A more credible and useful source increase positive attitudes toward products or services and induce or modified purchase intention than a less credible-useful source [80]. Tsao et al. [23] report that independent platforms are more "credible, professional and objective due to a lack of overt control by corporations" (p. 515) and these kinds of platforms has more users, comments, responses, and sharing.

Moreover, Yan, et al., [86] in an experimental design, evaluated the influence of eWOM on electronic commerce platform (EC-eWOM) versus Social Media eWOM (SM-eWOM) on the consumers eWOM adoptions and found an inter-relationship between the adoption of EC-eWOM and SM-eWOM: when EC-eWOM's credibility and usefulness positively affect the EC-eWOM adoptions, SM-eWOM's credibility and usefulness are negatively affected. Shan [80] studied the influence of online product reviews self-generated and system generated on source credibility evaluations and the results show that "top-reviewer, recognized by a peer-rating system have great expertise and trustworthiness than laypeople"; however, when the consumers perceive more similarity with the reviewer (homophily), the consumer tends to trust their reviews as on top reviewer.

The most common form of eWOM are Online Consumer Reviews [10]. Which are generated by anonymous consumers who expose their comments about products or services according to their own experience. This form of communication has revolutionized the way consumers and

merchants interact as they can be both a threat and a source of information for business decision-making [64].

In this research, we hypothesize that this source of information influences consumers' purchasing decisions. Therefore, a product with an opinion of other consumers is more likely to be selected than one without comment **(H₁).**

2.2.2 Stimuli

The stimuli' perspective focuses on the study of the influence of eWOM direction like valence, volume and argument quality. Valence is the direction of the eWOM consumer's reviews, and it will be positive or negative.

There is evidence that negative eWOM has a strong influence on purchase intentions. For example, Hornik et al. [46] demonstrated that people react differently to negative or positive eWOM: "they are more sensitive to negative information and disseminate it more often to a longer number of recipients, for a longer period of time and in a more elaborated and assimilated manner" (p. 278).

On the other hand, Kim, et al. [21], Study 1, found that electronic negative word of mouth (e-NWOM) have a negative influence on viewers: when they read e-NWOM is more probable that they attribute e-NWOM incident to be the company, then it is likely to create negative attitudes toward the company and reduce subsequent preferences.

Moreover, Doh & Hwang [19] demonstrated the relative influence of eNWOM on product evaluation, "a single negative message itself can be harmful for product evaluation; however, one

negative message in a 10-message set is not much harmful and even can be beneficial in the eWOM context" (p. 197).

Lastly, Lee, Park, & Han [22] found that eNWOM has a negative influence on consumer attitude independently if the consumer show high-involvement or low-involvement and independently of the message quality.

This research focuses on analyzing the influence of eWOM valence (positive versus negative) on purchase elections. The volume (quantity of eWOM) and quality (usefulness) characteristics of eWOM were not included because, as before we explained, for the consumer, quality is not an essential factor at the moment to consider consumers' reviews, and according to Global Web Index [6], consumers tend to read between 2 and 6 consumers' reviews before taking consumers decisions, so the volume will no be an important factor too.

Based on the aforementioned, we hypothesize that a negative comment about a product or service reduces the probability of being bought more than the effect that a positive message can have (**H₂).**

Product type

Another feature that has been identified as relevant is the type of product to which the eWOM is associated. According to the literature, an experiential good is more sensitive to the comments of consumers than a good search [23]. Good experience, due to its intangible nature, depends on its consumption to assess the level of satisfaction it generates [25]. For example, a tourist package is not good or bad *per se*, it needs to be lived to evaluate its result [87]. Therefore, this type of goods generate greater anxiety and risk sensation before their acquisition, so that they become

more inclined to generate search behaviors of experiences of other consumers who have lived it, to decide to acquire it. Tsao and Hsieh [23] found that these types of goods are more sensitive to positive comments than search goods. However, since in e-commerce, all goods are intangible until after their purchase, we hypothesize that the type of good does not have a differential influence on the effect of consumer comments on purchasing decisions **(H₃).**

2.2.3 Receiver

Receiver is "the individual who responds to the communication" Cheung & Thadani [10, p. 466]. The literature reports that some personal characteristics to the consumer or eWOM user are moderators to the responses (consumer intentions or consumer choice). Chun & Lee [12] found that involvement moderating type of content and intentions to subscribe/promote company social network site (SNS); individual with high level of involvement tends to promote an SNS more than individual with low involvement level.

Consumer expertise is another variable that the literature report has a moderating effect on purchase decisions. Park & Kim [15] found that the level of expertise influences the evaluation and adoptions of consumer reviews according to their type and number of online reviews; so the number of reviews has a stronger influence on novice that expert on purchase intention; but the type of reviews has a stronger effect on expert than novice.

In a psychological context, Wang et al. [4] study the influence of consumer's need for uniqueness (CNFU) on peer communication influence on product choice. CNFU defined as "the trait of pursuing differentness relative to others through the acquisition, utilization, and disposition of consumer goods to develop and enhance one's self-image and social image" [88, p.

52]. They found that CNFU has a moderating effect between peer communication and product choice, then a person with a high level of CNFU is less impressionable than one with a low level.

On the other hand, the tendency of the user to be active generating online reviews is another variable that is relevant to analyze. According to Park et al. [89], a person can participate in virtual communities as a poster or as a seeking for information,; in other words with an active or passive behavior.

A poster is a person who creates eWOM about a product or service and seeking the person who only is looking for information for making decisions. They concluded that the intention to share information about a product is negatively related to perceived knowledge; then, the person who perceives she/he has the higher level of knowledge about a product or service, she or he is less likely to seek product-related advice.

We hypothesize that the kind of participation will moderate the eWOM influence on consumers decisions and seeking for information person will be more influenceable than a poster one **(H₄).**

2.2.4 Response

The type of responses more frequently studied on eWOM research are consumer purchase intentions, attitude, perceived usefulness, eWOM review credibility, product choice and time spent [10]. Consumer purchase intentions are: the possibility or likely to purchase, in the future, a product or service; it has been measured, as a construct, on a six or seven-point Liker' scale, and consumer purchase intentions try to answer for this question "How likely is it that you will buy this product?" [14, 23, 4]. As an attitude, it has been defined as a predictor of behavior and means the positive or negative estimation about a product [19, 22, 90].

   Perceived usefulness and eWOM review credibility had been studied as predictors of eWOM

adoption and mean the probability of the consumer follow and change the behavior in the eWOM

directions [28, 91]. The product choice and time spent on e-commerce have been the kind of

response more used on the experimental design where its objective was to measure the direct

effect of eWOM on consumer choice, and they will be the way to measure the response behavior

in this research.

Figure 2.1 Research model.
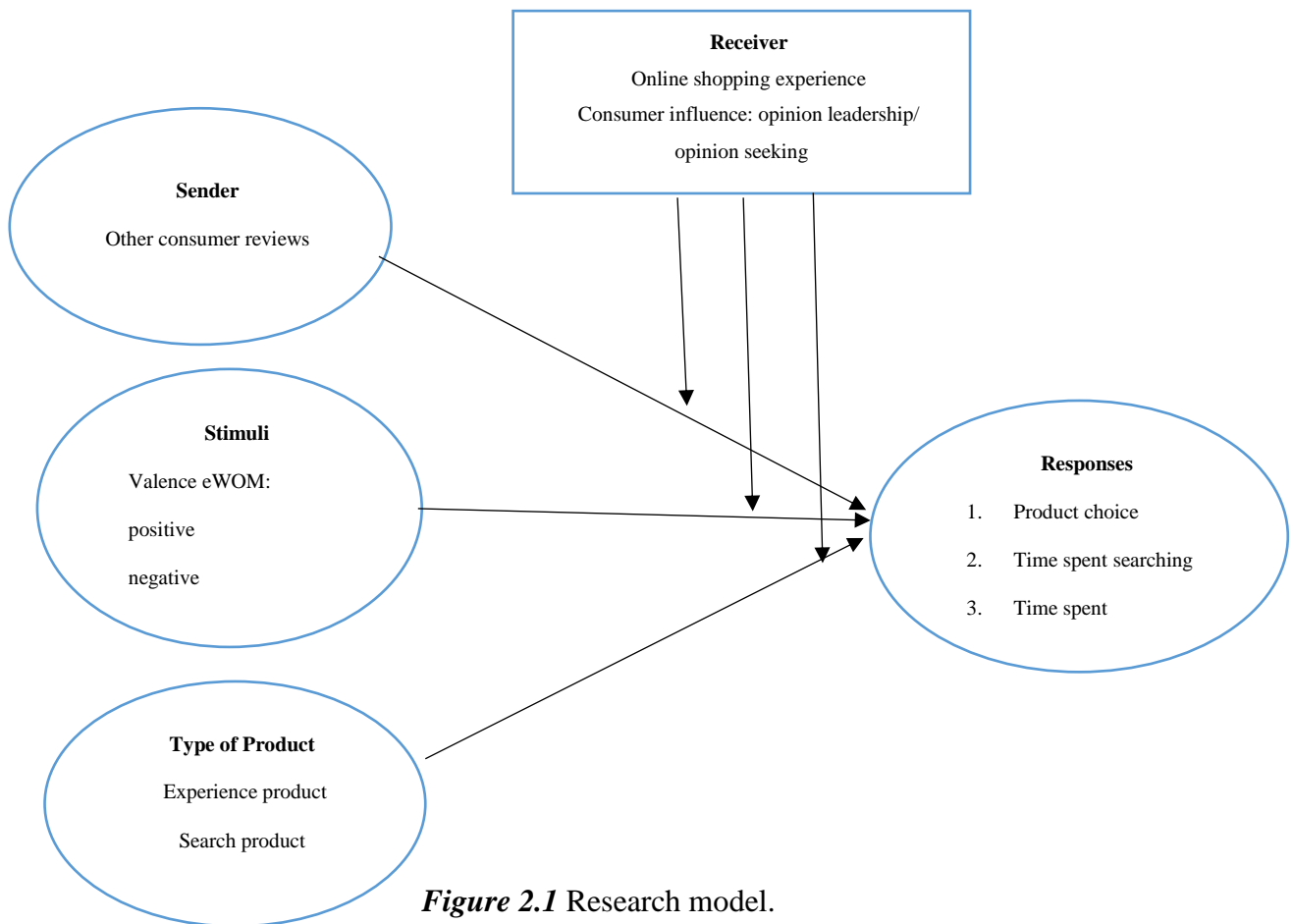
2.3 Research method

To test the hypotheses presented in this study, an experimental design was designed in an online store that has been designed expressly. Following are the procedural details, the sample and the variables included in the study.

2.3.1 Experiment overview

The experimental design, as illustrated in Table 2.1, has three (3) factors for two (2) level treatments: platform (product website or social network), product type (experience or search), and in a within-subject factor, is the eWOM valence (positive, negative) verifiable design. Leadership tendency and the online shopping experience are included as measured variables. A control condition with no eWOM provided was also included.

The context for the research product is the purchase of a smartphone in a realistic online retail setting. The smartphone was selected because it is one of the most common devices that students use and they have experience [92]. On the other hand, as an "experience" product, we use the the subscription to a streaming service for which the three best-known brands of the Market (Netflix, HBO, and Amazon Prime) were included in a realistic online store. Streaming was used as one of the services with the highest growth rate and use by young people to access television or movies through their smartphones [6].

Table 2.1 Experimental manipulations: platforms, product type, and eWOM valence.

		VALENCE	
		Positive	Negative
PRODUCT TYPE	**Experiential**	**Condition 1**: • Basic service characteristics • eWOM on WS button. • P1+/ P2- (*)	**Condition 2**: • Basic service characteristics • eWOM on Facebook button. • P1-/ P2+
	Search	**Condition 3:** • Basic product characteristics • eWOM on WS button. • P1-/ P2+	**Condition 4**: • Basic product characteristics • eWOM on Facebook button. • P1+/ P2-
CONTROL GROUP	**Without eWOM**	**Condition 5**: • Basic service characteristics	**Condition 6:** • Basic product characteristics

(*) P1+= product 1 with eWOM positive, P2- with negative valence. Both of them are similar products or services.

Participants were 180 students enrolled in a marketing research course in a public university of Colombia and Madrid who will obtain extra course points for their participation in the study. Participants were randomly assigned to groups of 50 students to each of the study conditions.

2.3.2 Procedure

The experiment will have three phases. In the first, the subjects are asked to complete an online questionnaire with demographic information. During the second one, a 2 x 2 x 2 online experiment was conducted. As an in between-subject factor will be manipulating the platform factor. Subjects are assigned to one of two platforms where the eWOM was posted: social network (Facebook) or product website. The second in the between-subject factor manipulated were product type. Subjects were assigned to one of two conditions: smartphone or movie, and the last factor, as the within-subject factor, is the eWOM valence manipulation. During the third

and last phase the subjects are asked to complete online, the questionnaire "Opinion leadership/

Opinion seeking scale" [16] to measure the leadership or follower tendency of the participants.

2.3.3 Measures

Independent variables

1. The virtual place where the eWOM will be shown and manipulated by the type of platform

    (Social network versus the web page of the product or service); the number of consumer

    reviews is the same for each condition.

2. Two types of products were included in the study (experiential versus search product).

    Following the Nelson [25, p. 730] "distinction between qualities of a brand that the

    consumer can determine by inspections prior to purchase of the brand -search qualities-

    and qualities that are not determined prior to the purchase -experience qualities-", we will

    manipulate the type of product including one kind of product for each category.

3. Finally, eWOM valence (positive versus negative) was manipulated in a within-subject

    design. All of the participants of experimental groups will be exposed to two options of

    each product (movie or smartphone), and additional to product characteristics, the

    participants will be exposed to consumers' reviews with positive valence in one product

    option and the other one with negative valence. Two control groups will be running

    without other consumer reviews, only with product characteristics.

Others variables (constructs)

Besides independent variables, we will measure demographic variables (gender, age), online shopping experience and the constructs opinion leadership or opinion seeking consumer tendency. These variables were measured by an online questionnaire applied at the beginning and end, respectively, of the study. The participant will complete the questionnaire "Opinion leadership and opinion seeking scale" by [16].

Dependent variables

These are three dependent variables: product option, total time spent on the site (TTS), and time spent considering eWOM (TSCe). Product option is evaluated with the final election that the participant chooses, doing click on the appropriate button for that purpose; it was a dichotomy variable (option A or B). The two other variables, TTS and TSCe, were measured in seconds by the systems. The first one (TTS) starts when the participant clicks on the instruction of product evaluation and finishes when he or she completes all the process and when the screen shows a thanks message. The second one (TSCe) were measured, only if the participant clicks on the eWOM button (Facebook® or product website logo), and it measures the time, from the moment the participant clicks on that button until they click off from it.

2.4 Results

The data were analyzed with the SPSS 22 software. A Chi-Squared test will be running to evaluate the relationship between eWOM consulting and product choice [26]. Also, a Hierarchical logistic regression has been completed for test hypothesis about the eWOM' valence, product type and other demographic variables [23].

2.4.1 Descriptive analysis

The first step is evaluating if the treatment had any effect on consumer purchase behavior. Figure 2.2 shows that 72,6% of participants of the treatment group (with eWOM) decided not to buy the product or services. In the control group (without eWOM) 55% not buying. Then, the presence of eWOM biased the consumer purchase decision, if we compare with the control group ($p < .01$).
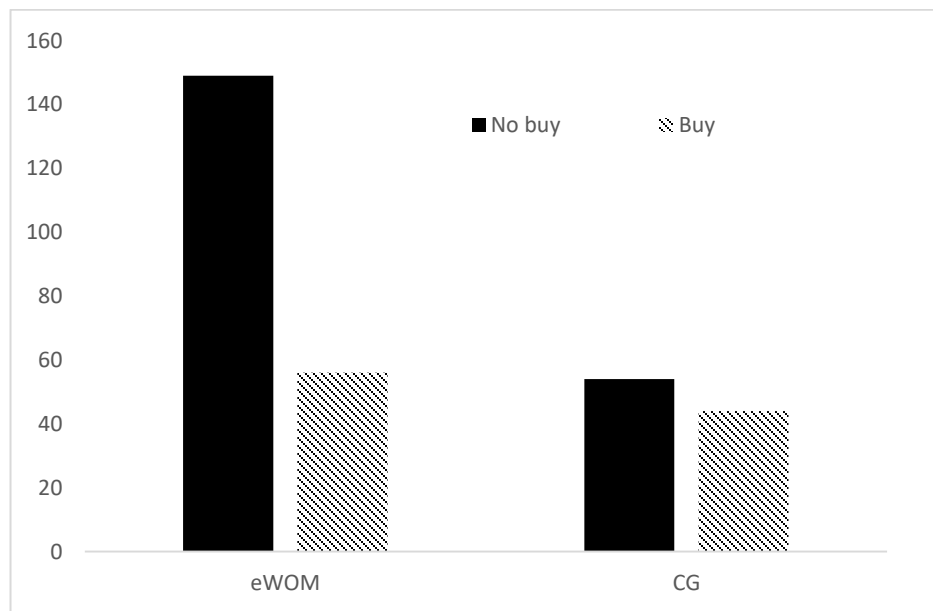
Figure 2.2 Consumer behavior treatment versus control group.

Regarding the eWOM' valence, the consumer purchase behavior, according to eWOM' valence, (Figure 2.3), shows that near 50% of positive' valence group ($p > .05$), as a control group, buy the product; but 79% of the negative valence group follow the eWOM direction and did not buy the product.
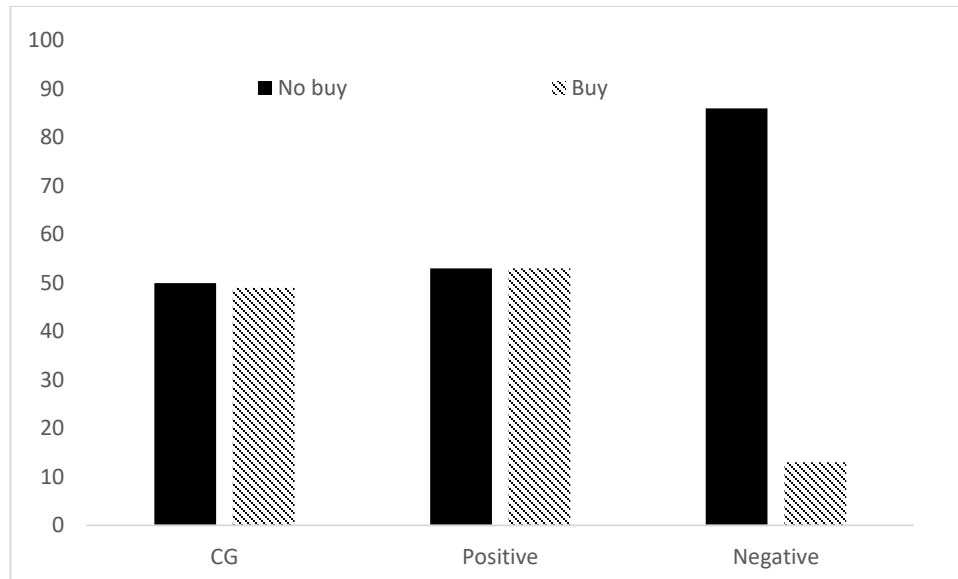
Figure 2.3 Consumer behavior according to eWOM' valence.

Regarding the product type, Figure 2.4 shows that while 82% of service group decided not to buy it and, 35% of product group buy it. Table 2.2 evidence that while 64% of the participants from the negative valence group and service, decided not to buy the services, 26,4% of the participants from the positive and product group decided to buy the product (Figure 2.5).
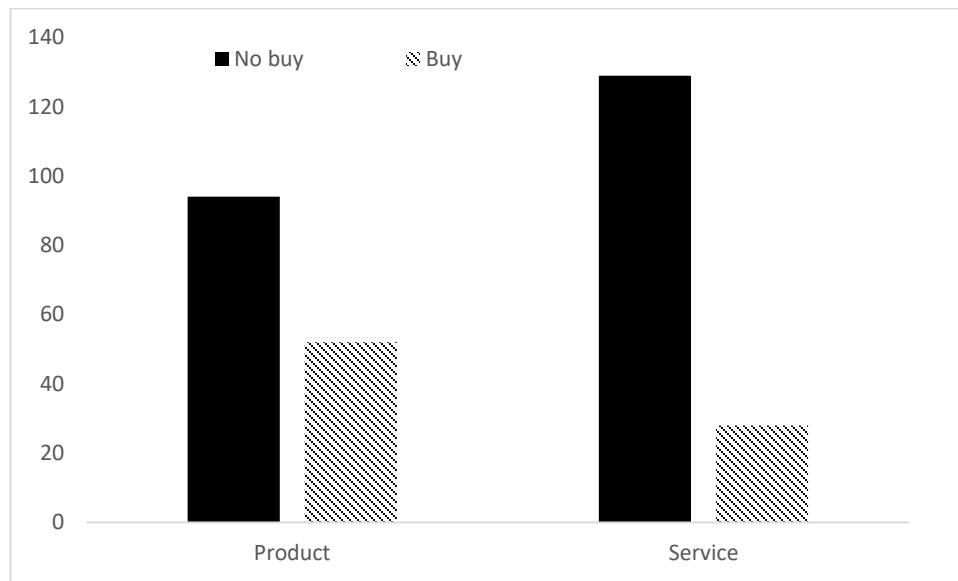
Figure 2.4 Consumer behavior by product type.
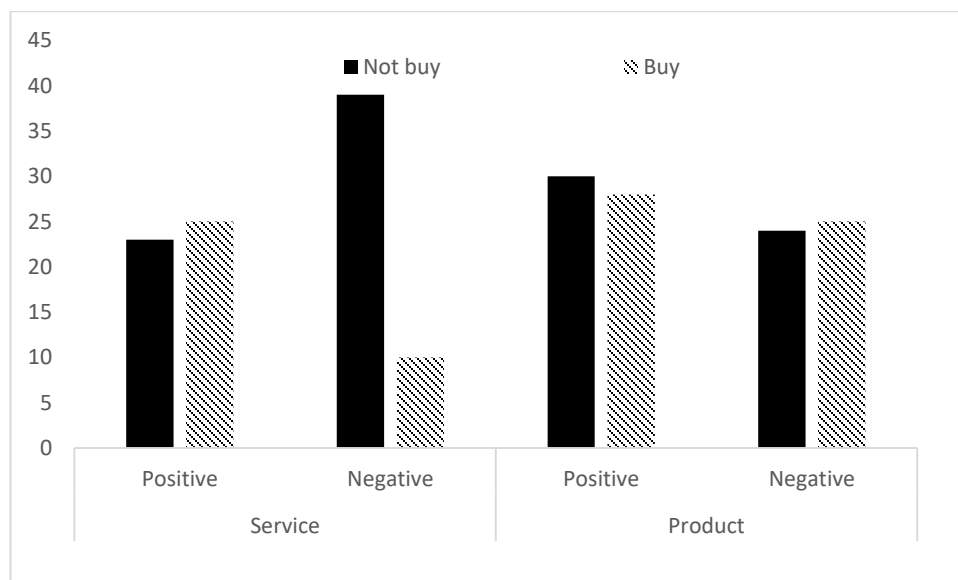
Figure 2.5 Consumer behavior according to product type and valence.

2.4.2 Hierarchical logistic regression's results

The model summarizes in three steps was calculated using the B coefficients or Odds ratios with 95% coefficients intervals for not buy the product or services; since the crosstabs (Table 2.2) shows that experimental group (with eWOM) biased the consumer behavior not to buy the product or service when the eWOM' valence was negative, we use this variable as the predicted variable [93], then hypothesis 1 (**H₁**) is supported.

Table 2.2 Valence, buy, product type Cross tabulation.

VALENCE				Buy		Total
				0	1	
Positive	Product type	Product	Count	30	28	58
			% of Total	28,30%	26,42%	54,72%
		Service	Count	23	25	48
			% of Total	21,70%	23,58%	45,28%
	Total		Count	53	53	106
			% of Total	50,00%	50,00%	100,00%
Negative	Product type	Product	Count	24	25	50
			% of Total	24,24%	25,25%	50,51%
		Service	Count	39	10	49
			% of Total	**39,39%**	10,10%	49,49%
	Total		Count	63	35	99
			% of Total	**63,64%**	35,35%	100,00%
Total	Product type	Product	Count	72	25	97
			% of Total	66,67%	23,15%	47,32%
		Service	Count	77	31	108
			% of Total	71,30%	28,70%	52,68%
	Total		Count	149	56	205
			% of Total	**72,68%**	**27,32%**	100,00%

$**p < .01$

Results of binary logistic regression (Table 2.3) reveal that the eWOM' valence increase the odds of not choosing the product or service significantly (p < .000). The odds of participants on the negative eWOM' valence group of not buy the product are significantly greater than those of positive eWOM' valence group (p< .000). Hypotesis two (**H₂**) was supported. Likewise, the product type has a significantly influence on buy or not buy a product, the participants exposed to experimental group with a service, increased the probability to not to buy it (p < .001), then, hypothesis tree (**H₃**) was not supported and, the odds were greater when the two conditions were combined, services and negative eWOM' valence (p< .000).

Table 2.3 Hierarchical binary logistic regression analysis of variables affecting the product chosen.

Step	1		2		3	
x^2	62.333**		121.567***		134.985***	
Nagelkerke R	.232		.336		.543	
Predictors	**EXP (B)**	**Wald**	**EXP (B)**	**Wald**	**EXP (B)**	**Wald**
Valence	4.768	57.93***	5.623	57.546***	5.864	58.954***
Product type	3.824	34.670***	4.117	38.901***	4.762	39.657***
Age	.021	1.234	.200	1.013	.004	
Gender	.003	1.012	.004			
Shopping experience	.017	1.167	.543			
Seeking tendency	.009	1.016				
Opinion leadership tendency	.004	1.011				

** Significance at 10% ***significance at 1%. Based on a sample of 298

The accumulative variance explained for the model (step 1) with all variables is 23.2%; step 2 the variables, age, gender, consumer purchase experience was eliminated, and the variance explained was 33.6%. Finally, step three, the model only includes the variables eWOM' valence and product type with total variance accumulated explained of 54.3%.

Even though all three models are significant at 10 and 1% following parsimonious criteria the model three is selected because it is the most statistically robust. Then the probability to not choose a product are explained by the eWOM' valence and the product type. Negative valence eWOM increase the probability of not choose a service than a product (p< .000).

2.5 Discussion

The consumer comments regarding products or services that have been published through social networks or free forums on the web have become a revolution in communications between consumers and entrepreneurs. On the one hand, consumers feel empowered to share their consumption experiences, positive or negative, with other known or anonymous consumers and these reviews are influencing attitudes toward products or brands [80]. Likewise, for companies, they have become an ambivalent mass medium of communication, as they obtain direct feedback from their current or potential clients; but at the same time, they become a threat when the comments are mostly negative, which leads them to rethink their strategies or in many cases to take their products out of the market [13].

The recent literature on eWOM shows that this form of communication influences buying attitudes and intentions [10]; also, with a meta-analysis [35] concludes that the eWOM influences the sales of the products. However, it was necessary to study empirically if the eWOM and, under what conditions, eWOM influences the decisions to buy or not a product.

The primary objective for this research was to fill this gap in the literature, for it experimented with natural conditions in a way that would allow us to evaluate if the eWOM could change the buying behavior of consumers.

The variables that report the literature as the most significant in this topic were included, namely, the valence and the type of product [10]; Likewise, demographic variables were measured, such as gender, age, and constructs such as tendency to leadership, tendency to consult eWOM or to comment on their shopping experiences in online forums [16].

The results of our study showed that the eWOM have an influence on the consumer purchase decisions, and that influence is more pronounced towards not buying a product that has to buy it; this was evidenced, primarily when the valence of the comments was negative and much more if those negative comments were about services. The group that was randomly exposed to negative comments increased the probability by 25% of not buying the product than when the comment was positive and on a product.

These results are consistent with what [22] reports regarding the negative bias that consumers tend to have when they have access to the opinions of other consumers, and such opinions are negative. Therefore, not only negative messages have a higher diffusion in social networks [21], but also exert a more significant influence on consumer purchasing decisions [85].

It is relevant to clarify that the characteristics of the person sending the comments are also important when making decisions, Tobón and García-Madariaga [55] showed that when an Influencer is sending the recommendation, the effect of the valence of the comment is opposite to when anonymous consumers post this. When the sender is an influencer, a positive comment has a more significant influence than a negative one. However, when other consumers post the message, the negative valence eWOM has a stronger influence than a positive one.

On the other hand, the results confirm the relative influence of the eWOM according to the type of product to which it refers, the effect being more significant when it is a service than when it is a product [23]. Purchasing a service, given their intangibility and the impossibility of testing before paying, imply more significant risks of being mistaken by the consumer, and of being dissatisfied in the transaction; therefore, a reliable source of information is the reviews that other consumers freely post on social media. In this case, not only the eWOM has more significant influence than in the case of the purchase of a product, but when the eWOM is negative, it significantly multiplies the probability of not buying the service, reducing to zero the risks of error in the taking of consumer decisions.

In terms of stimulus characteristics, the eWOM valence is a relevant factor in the analysis of the influence of eWOM on consumer decisions, where a message with negative valence has a more significant influence than a positive one. The results are consistent with Kim et al. [21] about the strong influence of negative messages than positive ones on consumer decisions.

Regarding the characteristics of the communicator or who publishes the commentary or recommendation of the product, the results of this investigation show evidence that the comments published by anonymous consumers have a significant influence on the decisions of purchasing or not of products or services.

This influence can be explained by the fact that consumers tend to rely more on the comments of other consumers than on the recommendations of the system or of celebrities who in many cases are biased or have been paid to try to influence purchasing decisions [55].

These results contrast with the [94] results reported by Tobón & García-Madariaga [55], regarding the greater credibility of the opinions of other consumers than the recommendations of paid opinion leaders, so that they have an extensive network of followers in social networks.

Finally, regarding the characteristics of the receiver or person consulting the eWOM before making consumption decisions, this study showed that the tendency to be a search for recommendations is a predictor of how much the eWOM influences the final decisions of purchase or not of goods or services [17]. This influence would be explained because it is more likely that a person who is seeking for recommendations, feel more secure consulting the opinion of other consumers before making their own decision and follow it, adjusting their behavior to what the social group to which they belong say. Minimizing the risks and regrets after the purchase decision [95].

In this study, there were no differences in the influence of eWOM according to gender, previous experience of online purchase or age. The major limitation of the present study and that provides new research opportunities was the limitation of the sample to university students, then, it is expected that future research will include broader segments of the population that will allow evaluating how generalizable the results are.

However, due to the nature of the products and services studied, this type of population was ideal for evaluating the influence of eWOM on their purchasing decisions [26], since smartphone and streaming services are products and services that this segment of the population is demanding [6].

2.6 Conclusions and Implications

The literature on the influence of eWOM on consumer decisions has focused on studying how this type of communication impact the attitudes or intentions of buying products [84] or in sales [35]; however, it has not been studied empirically if the eWOM can modify the decisions to buy or not a good or service. The main objective of this research was to analyze empirically if eWOM had an influence on online purchasing decisions. An experiment was designed in an online store, where the valence and the type of product were manipulated.

The results reveals that eWOM has a direct influence on online purchasing decisions. That this influence has a negative bias, in that the presence of eWOM makes it more likely that consumers will not buy the product and that when the valence of the eWOM is negative, its probability of not being purchased increases by 25%, in particular when the comments refer to a service.

These results support the claim that a negative message does more harm than ten positives [96], and support the results of Kim et al. [21] regarding the impact that negative comments have on a product in purchasing decisions. Moreover, the results are consistent with Tsao and Hsieh [23] regarding the greater susceptibility of consumers to negative comments about services. These, being intangible, imply greater risks for the consumer, so not only makes more likely to be consulted the comments of other consumers, but the direction of such comments influence the final decision.

Therefore, the results highlight the importance of the correct management of consumer reviews by marketers, so that they can understand the reason for the comments and try to respond to them, not try to ignore them since they will be even more damaging to the corporate and brand

image. Likewise, rather than attempting to increase positive comments, they should focus on

managing the negative ones, since they have a more significant influence on the decision making

of potential clients.

 Future research should include another type of eWOM such as likes, emoticons or stars to find

out which one has the most influence in purchasing decisions. Also, the studio is susceptible to

replicate with another category of products or services and with a different type of participant or

with an OL as a sender of the eWOM.

The next chapter analyzes whether the eWOM generated by an opinion leader has an influence on

consumer decisions and what their determinants are.

CHAPTER THREE:

The Influence of Opinion Leaders' eWOM on Consumer Online Decisions: Does the product type and valence matter?

3.1 Introduction

An opinion leader (OL) is a consumer who provides information that influences the consumption decisions of others by obtaining essential information through research and shaping their own opinion before making it public [78]. Their importance in product promotion [97], and product introduction [98, 99] has been exploited by practitioners and studied by researchers. They have received less attention in terms of their effect on consumers' online decisions.

In the digital consumer era, OL eWOM becomes an indispensable source of information that needs to be analyzed in terms of its actual influence on purchase decisions – it is even more important than evaluating the virality of the information in user-generated content platforms. According to the Global Web Index [6], nearly 95% of online adults have at least one social media account, 88% are Facebook users, and people are spending on average 1 hour and 58 minutes per day on social networks and messaging. 85% of users engage in social networks to keep up with friends and read the news for fill time. The above information confirms that the two principal sources of information about new brands are influencers and eWOM [100].

Social media users tend to follow their OL and look for advice regarding their consumer decisions. Then, the followers of celebrities know what products and services that the celebrity buys and uses [52]. These kinds of public figures become of great interest to marketers who attempt to use the platform to promote their products [101, 102]. For example, Cristiano Ronaldo, who has more than 120 million followers on Facebook, is promoting banks, video games, sports

clothes, and smartphones. How effective are these marketing strategies? How much do they influence consumer behavior?

There is an extensive amount of literature regarding the eWOM's influence on consumer intentions, including specific characteristics of the eWOM, such as valence [79, 103, 39], the page where it is posted [23], and the source's credibility [80, 104], or personal characteristics [58] The aforementioned have a differential effect on online consumer decisions [35]. However, it has not been proven that this kind of communication has any effect when an OL sends it. Since it can be considered a corporate source of information, because most of the time celebrities are promoting a brand for pay, it is necessary to analyze if this influences the consumer purchase decisions.

This research answers the following questions: 'Is an OL's eWOM changing consumer purchase decisions in the e-commerce context?', 'Does OL eWOM have the same influence on the purchase of a product as it does on the purchase of service?' and 'Does the ability to influence vary depending on its positive or negative valence?'

3.2 Literature Review and Hypotheses

The following is a review of the main and most recent literature on opinion leadership and on Valencia and the type of product referred to in the eWOM literature. Based on this literature, the hypotheses to be tested empirically in this research are presented.

3.2.1 Opinion Leadership

Opinion leadership refers to an individual's ability to informally shape the attitudes, opinion, and overt behavior of others [16, 105]. An OL is a person that, due to their competence

(knowledge), personal traits or expertise, can change the attitudes, opinions or behavior of their followers [97, 106].

According to the traditional concept, personal predispositions characterize an OL – "Who one is"-, competence – "What one knows"-, and social connections - "Whom one knows"- [107].

Regarding personal predispositions, Weimann [108] confirmed the "Personality Strength Scale" and showed that people with high personality strength scores tend to become an OL and occupy a central position in the social network. These kinds of people are usually charismatic and see themselves as having the possibility to influence the attitudes and behaviors of others.

Regarding competence, Loeper, Steiner & Stewart [109] presented evidence that people with more knowledge or ability on a given subject influence the behavior of their followers, even when their opinion is biased. As for social connections, an OL is someone who has contact with lots of people and who can, therefore, interchange information and opinions with them [110].

However, Gnambs & Batinic [106] demonstrated that for an OL to have real influence on his followers, competence or knowledge alone is not enough - they show that the OL must also have specific competencies and dominant independent personality traits such as influencer traits. The authors emphasized that "with increasing levels of influencer traits, the effect of knowledge on opinion leadership gradually decreases; i.e., objective knowledge is first and foremost important for those who are not influential by disposition" [106, pp. 611-612]. Therefore, knowledge is a precondition for opinion leaders, but it is not essential [111, 112].

In the context of social media, where the number of followers or likes determines the influence that a person, image, comment, or opinion receives, and where anyone can post their opinion

freely through different types of eWOM such as reviews, recommendations, and likes. Anyone can become an OL, even in contexts where they are not an expert [113]. Brands are using them to promote their products [114, 115]. This strategy has had satisfactory results in terms of communication [4]. However, when a new product is launched, most of the time it is just focused on creating activity on social networks rather than generating real sales.

However, how much credible is the OL eWOM? Shan [80] analyzed the credibility of self-generated versus system-generated online product reviews and found that the most credible source was self-generated product reviews posted by top reviewers as opposed to reviews by laypeople.

The literature about OL's influence on consumer decisions is contradictory. For example, Moldovan, et al. [94] demonstrated that OL's have influence but in small and strong-tie groups. Libai et al. [116] showed that, compared with a control group, OL's had not got a significant influence on a firm's value and Katona, et al. [117] found that OL's have less influence than other consumer recommendations.

On the other hand, Iyengar et al. [99] found that OL's have more influence as they are a heavy product user for a specific product rather than light users. The level of product use is a relevant factor. Valente and Davis [118] demonstrated that OL's are the most effective source of message diffusion. In the same direction, Weimann [108] showed that compared with no OL's, the OL's spread more brand information and news for the followers to make decisions. OL's are less effective at spreading gossip than no OL's.

Based on the above evidence, the first hypothesis was established; a product that had been recommended for an OL eWOM is of more worth than that that has been purchased without an OL eWOM recommendation (**H₁**).

3.2.2   The eWOM' valence

Valence is the direction of the eWOM consumer's reviews and can be positive or negative. "Positively framed eWOM highlights the strengths of a product/service and encourages people to adopt a particular product/service, while negatively framed eWOM emphasizes the weaknesses and problems of a product or service and thus discourages people from purchasing it" [10, p. 464].

There is not a consensus about the influence of the eWOM's valence on purchase decisions [96]. Most of the literature analyzes the eWOM valence's influence on purchase intentions, and the results have been inconsistent [79].

For example, there is evidence that negative eWOM (e-NWOM) has a stronger influence than positive eWOM (e-PWOM) on purchase intentions, especially concerning the dissemination of reviews [19, 22].

Hornik et al. [46] demonstrated that people react differently to e-NWOM than they do to e-PWOM: "they are more sensitive to negative information and disseminate it more often to a greater number of recipients, for a longer period and in a more elaborate and assimilated manner" (p. 278). Kim et al. [21] also found that e-NWOM has a negative influence on viewers: when they read e-NWOM, they are more likely to attribute an e-NWOM incident to the company, and

as such, they are more likely to form negative attitudes toward the company and subsequently show the company less preference.

Doh & Hwang [19] demonstrated the relative influence of eNWOM on product evaluation: "a single negative message itself can be harmful to product evaluation. However, one negative message in a 10-message set is not too harmful and can even be beneficial in the eWOM context" (p. 197) since the presence of only positive messages can harm the credibility of the website.

Lastly, Lee et al. [22] found that eNWOM has a negative influence on consumer attitude regardless of whether the consumer shows a high-involvement or low-involvement, independent of the quality of the message.

On the other hand, Zhang et al. [103] found that e-PWOM is more persuasive than e-NWOM when the consumers evaluate products associated with promotion consumption goals (positivity bias). They perceive e-NWOM to be more persuasive than the positive when the consumer examines a product associated with prevention consumption goals (negativity bias). Jin and Phua [79] reported there to be a negative correlation between the eWOM's valence and the number of followers: consumers are more prone to spread eWOM from celebrities with a low number of followers when the eWOM's valence is negative. They found there to be a positive correlation if the celebrity has a high number of followers because the consumer indicates the firm intention to spread the celebrity'seWOM when he/she posts reviews with positive valence.

The literature notes the different effects of persuasiveness according to eWOM's valence and product functionality. However, it is necessary to analyze whether or not positive and negative OL eWOM have the same effect on purchase decisions, as well as its effect when the eWOM is

about a product (search) as opposed to a service (experiential goods). Given the crucial importance of the effect of OL eWOM on purchase decisions depending on its valence, the second hypothesis was proposed, postulating that an OL's eWOM, with positive valence, is more effective than a negative message (**H2**).

3.2.3 Product Type

Another variable that influences the effect of OL eWOM on purchase decisions is the product type [23]. According to Armstrong & Kotler [24], there are two types of product: goods and services, and depending on the whether or not the consumer can interact with the product before purchasing it; they are classified as search goods or experiential goods respectively [25].

There is convincing evidence that the consumer is more influenced by eWOM when the product that they are buying is an experiential good than when it is a search good. In general, an experiential good represents a higher risk for the consumer [26, 23, 30, 119]. However, in the context of e-commerce, since all products are experiential ones, in that the consumer does not have the opportunity to interact with the product directly before he or she chooses it, it is necessary to study this condition in the context of online consumer choices.

Ahmad and Laroche [120] analyzed real consumer reviews on Amazon.com and found that positive reviews were more frequent for product characteristics like functionality, aesthetic, technical aspects, or brands and that negative reviews were more common for reports of service-related failures (online order, delivery mishandling, or shipping charges). Moreover, the consumers were more inclined to post negatives reviews when the services were unsatisfactory than they were to post positive reviews when the service was excellent.

In the context of experiential goods, the most-studied services have been tourism and hotel services due to the importance of eWOM on sales [121]. Racherla and Freske [122] found that the most critical eWOM characteristic, about experiential goods that the consumer values, is the eWOM utility, which is moderated by the reviewer's reputation and the number of followers that the reviewer has.

However, when the source of eWOM is an OL, does it have the same influence on the search for an experiential good? Based on the previous information, the third hypothesis was proposed, reflecting that OL eWOM has more influence on the purchase of an experiential good more than a search good (**H3**).

Figure 3.1 shows a summary of the three hypotheses and possible variable directions.
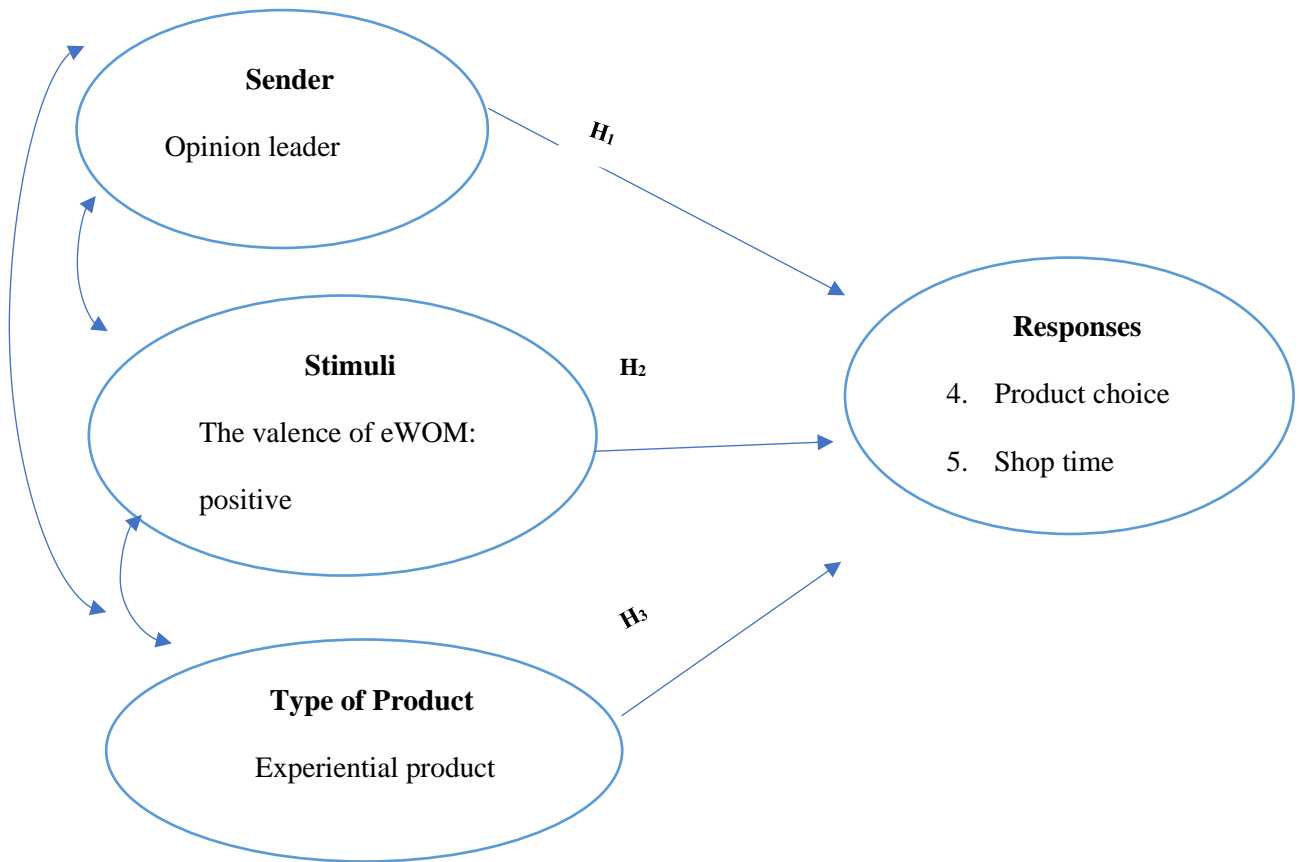
Figure 3.1 Research model.

3.3 Methodology

An online store was designed with the purpose of testing the hypothesis. Following are the procedural details, the sample and the variables included in the study.

3.3.1 Experiment Overview

The data came from a convenience sample of 300 undergraduate students from Colombian and Spanish universities who took part in a lottery for a smartphone. Each participant was randomly assigned to one of six group treatments in a 2^3 experimental online design (Table 3.1).

In an online store designed deliberately for this research, there were three brands of smartphones (Xiaomi; HTL, Yodaphone) as the product and three brands (Netflix, HBO, Amazon Prime) of streaming video subscription as the service. As an OL, we used Cristiano Ronaldo because of their large number of followers on social media.

The instructions on the front page showed that people could browse the online store and buy or not according to their preference, and that payment was not necessary. However, in the end, they had to choose "Buy" or "Not buy" with the information available [170].

The experimental design, as illustrated in Table 3.1, had three (3) factors for the two (2) levels of treatments: OL eWOM (OL, without eWOM); product type (experiential or search) and, the eWOM valence (positive, negative) verifiable design. A control condition with no eWOM was also included [92].

Table 3.1 Experimental manipulation: OL eWOM, product type, and eWOM valence

		VALENCE	
		Positive	Negative
PRODUCT TYPE	**Experience**	**Condition 1**: • Basic service characteristics • OL eWOM +	**Condition 2**: • Basic service characteristics • OL eWOM -
	Search	**Condition 3**: • Basic product characteristics • OL eWOM +	**Condition 4**: • Basic product characteristics • OL eWOM -
CONTROL GROUPS	**Without eWOM**	**Condition 5**: • Basic service /product characteristics	

3.3.2 Participants

Three hundred (300) undergraduate students from two public universities voluntarily participated in the study (51% were female, and 47% were male). Concerning the age of the sample, 45% of the respondents were in the range of 18-22 years old, which was the majority age group.

The descriptive analysis table (Table 3.2) has summarized the demographic characteristics of the participants and their e-commerce experience.

Table 3.2 Respondents' demographic profile (n=300).

		Frequency	Percentage
Gender	Male	144	47.7
	Female	154	51
	Other	4	1.3
Age	18-22	135	45
	23-27	93	31
	28-32	35	11.7
	>33	37	12.3
How long have you used the Internet?	Less than 1 year	5	1,7
	1 to 5 years	29	9.7
	More than 5	266	88.7
Have you shopped online before?	Yes	220	73.3
	No	80	26.7
Read review/comments before purchase?	Yes	237	79
	No	61	20.3

The respondents' information search for advice showed that 79% of the respondents read reviews or comments before their purchase and that 73% had shopped online before. 88.7% had more than five years' experience of using the Internet.

3.3.3 Procedure

The experiment had three phases. In the first phase, the subjects were asked to register on the website. In the next phase, the subjects were randomly assigned to one of two groups: search goods (smartphone: Xiaomi, Yotaphone, HTM) or experiential goods (streaming services: Netflix, HBO, Amazon Prime). Another two groups were randomly assigned to a group with positive valence eWOM and another with negative valence. Finally, the subjects had to choose to buy or not buy according to their preference.

3.3.4 Measures

 Independent variables. 1. Opinion leader eWOM: One group was shown OL eWOM, and another was a control group (without eWOM). The reviews were extracted from free blogs online about smartphones and streaming video services. 2. *Product type:* Two types of products were included in the study (experiential versus search goods). We manipulated the type of product including one kind of good for each category. For the experiential goods, we used streaming video service subscriptions, and the brands were Netflix, HBO, and Amazon Prime respectively. For the search goods, we used three little-known brands of the smartphone; Yodaphone, Xiaomi, and HTM. 3. *eWOM' valence:* positive versus negative was manipulated in the between-groups design. One group was shown a negative OL review about a product or service and another group was shown positive OL reviews. Additionally, we used a control group without any eWOM.

 Dependent variables. There were three dependent variables: product choice (PC), total time spent on the site (TTS) and shop time (ST). PC was evaluated based on the final selection that the participant made by clicking on the corresponding button for that purpose; it was a dichotomy variable (Buy/Not Buy). The two other variables, TTS and ST, were measured in seconds by the systems themselves. The former (TTS) starts when the participant clicks on the instructions for the product evaluation and finishes when he or she completes the process when the screen shows a "Thank you" message. The latter (ST) was measured, from the moment that the participant clicks on the registration button after completing the registration questionnaire, until they click on the "Buy" or "Not Buy" button.

3.4 Results

The results of the study are presented in this section, organized according to the hypotheses planned. In the first part, the descriptive analysis is presented and then the inferential analysis to conclude with respect to the proposed hypotheses.

3.4.1 Descriptive Analysis

The results, in terms of consumer behavior (buy, not buy) were analyzed according to the experimental group. With this information, we can describe the influence of treatments on purchasing behavior. These results are contrasted with inferential statistical tests in the following section of the document.

Opinion leader influence. Figure 3.2 shows the consumer's behavior (buy or not buy) according to the group that they were assigned: with OL recommendation or without it (Control Group). Nearly 50% of both groups selected 'buy,' and the other went for 'not buy.' There was not much of a difference between the experimental group and the control group.
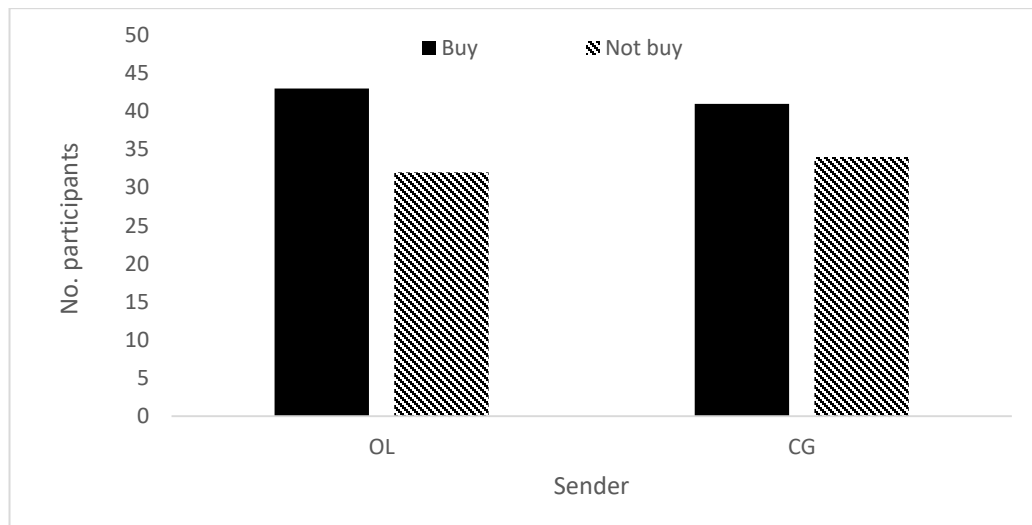
Figure 3.2. Consumer purchase behavior with or without OL eWOM.

Valence. 68% in the positive valence group bought the product while only 23% of the negative

valence group did (Figure 3.3).
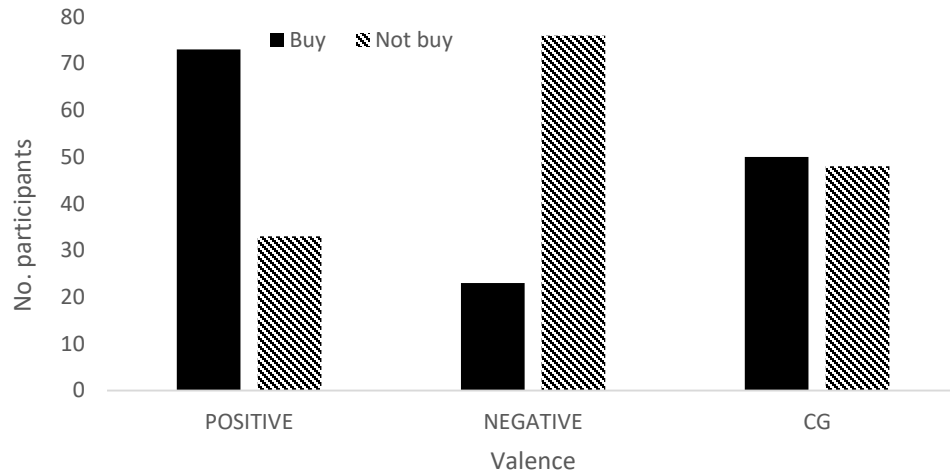
Figure 3.3 Consumer purchase behavior according to eWOM valence.

Product type. Figure 3.4 represents the consumer behavior according to the product type. 77% of the experiential group made a purchase, and 23% did not. On the other hand, 73% of the search product group did not buy.
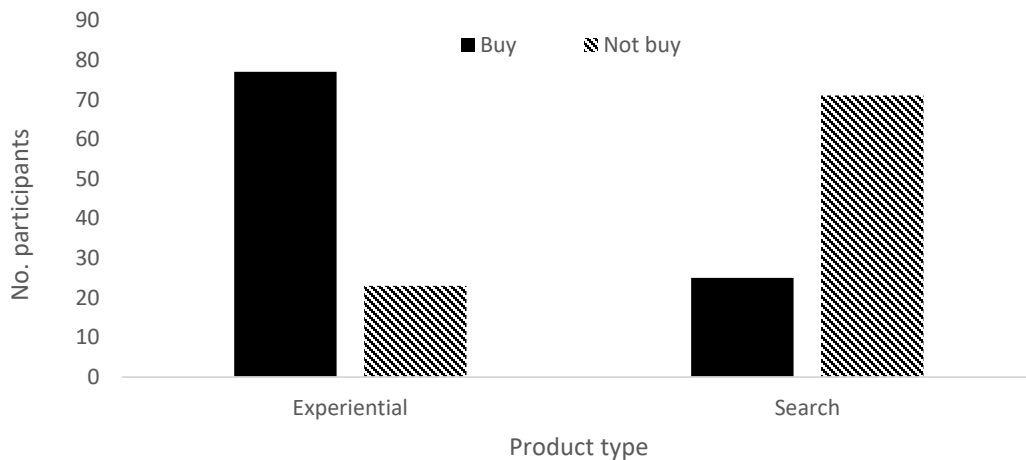
Figure 3.4 Consumer purchase behavior according to product type.

3.4.2 Regression Coefficients and Hypotheses Testing

To answer the research questions, we analyzed the data collected at the online store using SPSS Version 22. In order to test the three hypotheses, a Factor Analysis of Variance (FANOVA) with a Mixed Effect was conducted (Table 3.3) in order to assess the relationship between the dependent variable (purchase/no purchase (ST)) and the independent variables (OL eWOM and valence (positive/negative) and product type (search/experiential goods)). This analysis was the most appropriate due to the presence of non-normal data [124]. Preliminary tests performed on our sample showed the presence of non-normal data, particularly variable time. Therefore, FANOVA with a Mixed Effect, which is less severe when employed to these kinds of bias, was conducted [125, 126].

Table 3.3 FANOVA for Mixed Effect and Hypotheses testing.

Main effect and interactions	df	X^2	Hypothesis	Supported
Opinion leader eWOM	1	4.287	H_1	No
Product type	1	131.26*		
Valence	2	122.08*		
OL x Valence	2	14.245*	H_2	Yes
OL x Product type	2	22.063*	H_3	Yes

*p < 0.001

Table 3.3 shows the main effect and interactions between the variables. The FANOVA analysis showed no significant main effect from OL eWOM (4.287, p<.087). Thus, Hypothesis 1 was not supported.

However, the analysis revealed the main effect came from valence (122.08, p<.000) and product type (131.26, p< .000). The interaction of OL and product type and valence supported Hypotheses 2 and 3. Further analysis (Table 3.4) compared the interaction between the three independent variables to establish which factors were significant. The most significant combination was OLeWOM-positive valence-related to a good experience. Therefore, we can conclude that OL eWOM is useful when it is positive and about an experiential good.

Table 3.4 Intra-group analysis.

PRODUCTTYPE	LEADER	VALENCE	Difference (I-J)	gl	Sig.
Search	Opinion leader	Positive	-20.65	1	.786
		Negative	-23.46	1	.931
		Without	-34.24	1	.672
Experiential	**Opinion leader**	**Positive**	**24.567**	**1**	**.000***
		Negative	9.86	1	.340
		Without	.93	1	.235

The analysis showed (Figure 3.5) that OL'eWOM when it is compared to a control group without eWOM, does not have a considerable influence on purchase decisions by itself. However, the interaction of OL eWOM with product type and valence was significant. Then, the

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OL's eWOM has a significant effect on the consumer's purchase decision if it is related to a service and if the valence is positive.

Sender

Opinion leader

Stimuli

The valence of

Type of Product

Experiential/

Responses

1. Product choice

2. Shop time

4.287

122.08*

131.26*

20.07*

24.56*

27.08*
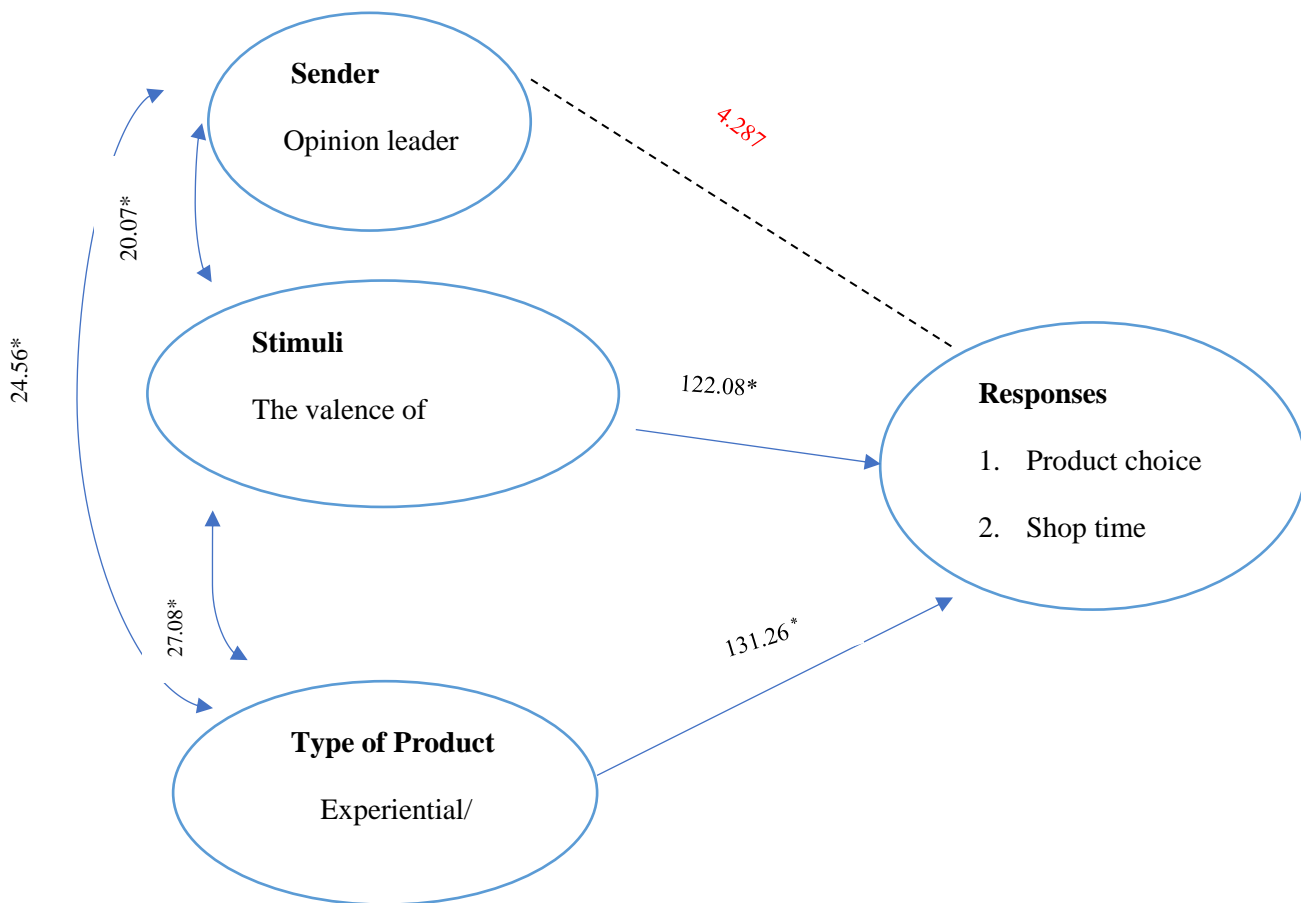
* <.000

Figure 3.5 Research analysis results.

3.5 Conclusions and discussion

 The influence of eWOM on consumer purchase intentions has been studied extensively by many researchers [84, 15, 14, 103], especially the impact of eWOM regarding the product type and its valence [23]. Moreover, many papers have studied the role of OL's in how reviews spread [77, 114, 109, 17, 108], and when concerning social contagion [99]. However, it is necessary to analyze the influence of OL eWOM on consumer purchase decisions in a realistic online context. We analyzed this topic using an experimental online 2^{x3}-factor design.

 The main conclusions were:

1. An Opinion leader does not have a significative influence on consumer purchase decisions when his recommendations are compared with a control group without eWOM (H_1.)

2. When the valence of the OL recommendation is analyzed, positive valence has a positive influence on consumer purchase decisions (H_2).

3. The product type is a relevant variable concerning OL influence; the consumer is more susceptible to being influenced by the OL recommendations when it is about an experiential good than when it is about a search good.

 The result shows that OL influences consumer purchase decisions only when reviews are positive and for an experiential good. These results are consistent with Zhang et al. [103] and confirm a positive bias in consumer behavior. It shows that OL eWOM is useful when it is

related to an experiential good, and the valence of the message is positive, but not when it is about a search good [23].

Moreover, the evidence also shows that the OL eWOM itself does not have a significative influence on consumer decisions [116] and that the influence is about the context: namely product type and message valence. A positive OL recommendation an influences the consumer's decision to buy or not buy a good [103], but a negative recommendation affects the message's spread [19, 22].

An experiential good is riskier to buy, which makes the OL eWOM more significant [127]. As the consumer cannot interact with the product before purchasing it and because the satisfaction is a function of the final experience, after paying for it, the consumer can try to reduce the lousy decision risk by following a recognized person or the advice of other consumers [122].

For that reason, in the digital era, an OL can be anyone who has thousands of followers. However, his influence is not only limited to spreading information, but it is determined by the kind of good that he is promoting and the valence of the message that he is sharing. The practitioner has to do an appropriate segmentation of the market if they want to use this kind of strategy to promote their products.

3.5.1 Research Implications

These findings are consistent with the Theory of Personal Influence of Katz and Lazarsfeld [97], and detail the role of the OL in the ability to shape attitudes, opinions, and behaviors. Additionally, the results are in agreement with the conclusion of Iyengar et al. [99] regarding the importance of social network centrality for OL influence.

The results show a type of sociometric opinion leadership where, more than knowledge being the principal personal characteristic (a football player), Cristiano Ronaldo has "influencer traits" and a relevant social position within his social network [106, 128].

The eWOM source is a critical factor in credibility. The results are in keeping with Shan [80] and Tsao et al. [23] on the level of independence of the source; the more independent the source, the more credible it is. Consumers are aware that companies pay celebrities to advertise their products, and so their influence is limited to certain kind of products and according to the valence of the message.

3.5.2 Managerial Implications

The main results from this study are threefold: (1) OL eWOM has a relative influence on online consumer decisions, (2) eWOM valence is a differentiating factor in terms of the level of influence of the OL eWOM and (3) there is a differential effect of OL eWOM depending on the product type. The results support the use of celebrities to promote products or brands. However, consumers tend to distrust this type of review if they can compare it to the reviews from other consumers [55]. Marketers can use celebrities to launch and promote brands, but they risk losing credibility, and celebrities could lose followers [129].

The use of an OL for services is more effective and reduces the consumer's decision risk. A positive review is more effective than a negative one. On social media, people can recommend or refuse to promote a product or brand according to their experience, but in the context of opinion leadership, a positive message has a more significant effect on attitude and behavior influence [79, 103].

3.5.3 Limitations and Future Research

This research had some limitations that constitute future lines of research on the scope of the influence of an opinion leader in consumer decisions in e-commerce. First, the sample selected was extracted from a population of university students, which is conducive to the type of products and services analyzed, can limit the scope in terms of generalization of the results. Therefore, including other segments of the population would deepen the scope of this type of communication strategy.

Moreover, repeating the procedure with another opinion leader and with products or services of another nature would make it possible to elucidate whether the trend of the results is maintained or can, an opinion leader of another nature, have a greater influence on the decisions of consumption. For example, opinion leaders from other areas than football, such as politics, science or television. As well as more standardized products or, on the contrary, luxury goods or specialized products could be studied.

Finally, it is necessary to compare the influence of the recommendations when they are sent by opinion leaders regarding the influence when they are recommended by other anonymous reviewers. This section constitutes the following experimental procedure that we present in chapter 4.

CHAPTER FOUR:

Opinion Leader (OL) Recommendation versus Online Consumer Reviews (OCR):

The Moderating Role of Online Shopping Experience

4.1 Introduction

The two main ways that the consumer uses to learn about new products and brands are Online Consumer Reviews (OCR), and Opinion Leaders' (OL) recommendations [130]. OCR is a form of eWOM and could be defined as comments about a product or service made freely on the web by anonymous consumers. On the other hand, OL's tend to be consumers with a huge of followers or celebrities who are frequently exposed in the mass media or who have much activity in their social media account and they are used to promote brands [131].

According to the social influence theory of Katz and Lazarsfeld [97], OL has more influence on consumer decisions than mass media; then companies are looking for these kinds of persons who have much impact on another consumer. However, with the emergence of the Internet and Social Networking Sites (SNS), new ways of communication had risen, and new ways of spread information and agents had emerged. The more common are OL and OCR.

OL's are consumers who influence the attitudes, beliefs, and behaviors of their followers and this influence are due to their knowledge, personality traits and social network position [107]. Their importance on product launches or promotion were proven by Knoll and Matthes [132]; Iyengar et al. [99]; Katz and Lazarsfeld [97] and Arndt [98].

In consonance with the traditional concept, an OL is defined as a public figure with knowledge, personality traits and social connections from which others seek advice or opinions [107].

However, social media is changing this concept, and now, an OL may not necessarily be an expert [79], but rather a person whose social position and persuasive traits are enough to make them an influencer [106, 111, 99].

For example, on SNS, like Facebook or Twitter, an OL is now considered whoever has many followers and likes. They are neither necessarily an expert nor have a unique character [112]; but rather, people follow them because they are famous [129], so brands are using them to promote their products [114, 78, 133].

Recent literature about the social influence on SNS has used the concept of influencer or celebrities to analyze social impact. However, "influential becomes a simpler concept that can be useful, but it also means that we then lack clarity concerning the complexity of the social process that is influence." (…) "Social support and social pressure, applied by the opinion leader on his or her "everyday associates," were the mechanisms through which influence happened. Opinions changed when someone in a group paid attention to a mass message and then used their position within that group to personally influence the other members." [134, p. 1274].

Moreover, celebrities have been used in the marketing strategies of celebrity endorsements. "Celebrity endorsements are understood as a marketing technique in which an individual enjoying public recognition uses this recognition on behalf of a consumer good by appearing with it in an advertisement" [135, p. 310]. According to Knoll and Matthes [132], a celebrity endorsement strategy has a positive effect on brand attitude when the celebrity is a male and the product match with him; but whether the personality is a female and the product do not match with her, the endorsement is not practical.

We have assumed the concept of OL, instead of celebrity or influencer, because it lets explain the mechanisms of social influence in a context of SNS where the social position, interaction, and the number of followers are relevant in the impact of consumer decisions [134].

While this strategy has had good results in terms of a spread message [78, 4] when a new product is launched, most of the time they are merely creating activity on social networks rather than generating real sales [136]. Therefore, we have formulated the following research question: How much is an OL's eWOM influencing purchase decisions?

On the other hand, Online Consumer Reviews -OCR- have been widely studied to determine the level of influence that this kind of eWOM has on consumer intentions, rather than on behaviors [203]. The literature reports that an essential characteristic of this kind of information is its credibility [10, 35].

According to Tsao and Hsieh [23], when the source of eWOM is an independent source, it is more credible than the corporate source. However, companies are investing an enormous amount of money in promoting their brands with celebrities or OL; then, it is necessary to analyze which one of those two ways of social influence (OL versus OCR) have more impact on consumer purchase decisions in electronic commerce.

This research fills the gap analyzing the eWOM influence on consumer behavior, in a realistic online store, controlling the sender of eWOM (OL versus OCR) and measuring demographic variables and consumer previous shopping experience.

4.2 Literature Review and Hypotheses

The following is a review of the main and most recent literature on social influence. Based on this literature, the hypotheses to be tested empirically in this research are presented.

4.2.1 Social Influence: OL versus OCR

Social influence is the study of "how one person or group affects another's opinions, attitudes, emotions or behaviors" It can take on different forms such as: "persuasion, conformity, motivation, compliance, performance, obedience, leadership, and information exchange" [138, p. 3].

The study of social influence in diffusion and brand promotion began in the 1950s with Katz (1957)' research in which he analyzed the role of individuals in the dissemination of mass media communications. Katz and Lazarsfeld [97] raised the theory of personal influence in the traditional market place. According to this theory called "the two-step flow of communication," the "influences stemming from the mass media first reach "opinion leaders" who, in turn, pass on what they read and hear to those of their every-day associates for whom they are influential" [107, p. 63].

Then, the mass media has an indirect effect on consumer behavior, but OL has a direct influence on their followers. This theory has explained the standard strategy in marketing of search for OL to promote brands with their social network [139].

Katz and Lazarsfeld [97] demonstrated that anonymous persons, but with a social network central position, have more influence that mass media in the innovation diffusion and

communication, and how this informal way of communication, can change the behavior and become decisive in the people choice process.

This explanation was appropriate and useful in the traditional communication model, but with the arisen of the Internet and SNS, new forms of social influence have emerged [79].

With social media, where people are publishing almost everything about their day-to-day lives and changing moods, there are several ways in which social influence is exerted. For example, imitating the behavior of the people they follow by using the brands they consider that the leaders promote, assuming the opinion of others or adjusting their response to what is dominant in the social group to which they belong; or more formal, adopting the rule that has been established by authority [138, 140]. As social beings, people need to be part of a group. Internet and SNS have made it easy and fast for people to be part of a group or follow their friends, family, and even people they do not know personally, such as celebrities or bloggers with lots of followers. These type of people, who have many followers, are called OL *or influencers* [206].

Another source or information has arisen with the use of SNS's like Facebook, and with it, lots of anonymous users are also finding an audience and influencing other consumers' behavior. This type of information is called the electronic word of mouth -eWOM-. eWOM is defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the internet" [39, p. 39].

According to Cheung and Thadani [10], the literature about eWOM reports five kinds of eWOM, with Online Consumer Reviews, Online discussion forums, Blogs, Social networking sites, and online brand/shopping sites being the most common.

On the other hand, the role of the sender or communicator of eWOM as a communication media has been studied. This characteristic of eWOM determines the source credibility, which is related to expertise and trustworthiness [141]. "Expertise refers to the extent to which a communication source is perceived to be capable of making accurate assertions based on his or her relevant knowledge and skills," and trustworthiness "is based upon consumers' inferences regarding the reviewer's motivation to endorse or oppose a product" [80, p. 634].

Previous studies found that expertise and trustworthiness are determinants of eWOM adoptions [4, 80], and sometimes those characteristics are more important than product characteristics for consumer purchase decisions [26].

However, in SNS and forums online, almost everyone can post their product reviews, and it is tough to know how much expertise has the reviewer. Moreover, when an OL or celebrity posts his/her experience for free o real money, most of the time he/she has not any expertise about the product. That brings us to the next research question: Can this kind of communication change consumer purchase behavior?

According to previous literature results, we hypothesize that a product or service that has been recommended by an OL or OCR is far more likely to be purchased by that a consumer it than another that has not been recommended (**H₁**).

OL eWOM. When an OL post eWOM, most of the time is because they are promoting a brand and have been paid for by companies [99]. An OL is defined as a person who influences and shape the attitudes, opinions, and behaviors of other consumers [16, 106]. On the other hand, in network analysis, an OL is a person who has the most followers or connections and has a central position on the network [78, 118].

According to Roger and Cartano [128], there are three ways to identify an OL: self-designation, sociometric technique, and critical informant's technique. The first method "consists of asking a respondent a series of questions to determine the degree to which he perceives himself to be an opinion leader" (p. 438). The sociometric technique uses the level of centrality a person has on the network with the OL being whoever has the highest score (i.e., the most citations, the most followers). The critical informant's technique consists of asking select people to report their opinion about who the influential are [99].

The current research employs the sociometric technique to select the OL. Using Facebook's ranking of users with the most followers, we have found that Cristiano Ronaldo, who has more than 120 million followers [142], is an ideal OL in analyzing and testing the hypotheses [113]. We assume that he is an OL, more than a celebrity, because of his social position in social networks, number of followers and user interactions [134].

Recent research has shown how OL can change attitudes and behaviors of others [143, 114]. OL are characterized as experts [109, 144] or not [111], have distinctive personal traits [108], and are in a central social position [110, 99]. Therefore, they can use their influence to promote products and services [4].

However, the literature about the social influence of OL's on product promotion, message diffusion, and consumer behavior is contradictory. For example, Iyengar et al. [99] studied the role of OL in a drug diffusion between physicians and found that the more experience an OL has used a product, the more influential they are in product diffusion. Similarly, Bathia and Wang [145] demonstrated the influence of an OL, when a specialist, on the prescription choice of primary care physicians. Valente and Davis [118] simulated a network with an OL and small groups and found that when an OL starts a message, the adoption is 100% by period 3; but, when an anonymous user initiates the diffusion - only 30% adopt it in the same period.

On the other hand, Katona et al. [117] found that OL's have less influence than non-OL's in tightly connected groups. Libai et al. [116], with 12 simulated networks, studied the impact of hubs (members with most connections) and experts in increasing firm value and found that hubs are more effective (increasing profit by 24%) than experts (10%), but less than the control group (random seeding program). Finally, Moldovan et al. [94] analyzed how effective OL's are in the diffusion of innovation. They found that OL's are highly effective in small, close-knit groups, but not in large groups or with weaker ties between group members.

Online Consumer Reviews. On the other hand, there are millions of anonymous people who are posting their opinion about product or services, who do not have any interest in being recognized or followed, but rather, they want to share their consumer experience with other consumers [39]. This type of eWOM becomes one of the most relevant sources of information that people use before making consumer [120, 122].

For example, Ladhari and Michaud [60] examined the influence of eWOM about a hotel posted on Facebook on booking intention. They found that eWOM has a positive and significant impact on consumer intentions, and Internet users' trust moderates this influence.

Tsao, Hsieh, Shih, and Lin [23] studied the influence of valence and quantity of hotels reviews on booking intentions and found that the valence and amount of eWOM have a significant impact on consumer intentions; moreover, this relation is moderated by consumer conformity tendency. Then, a positive review is more effective in consumer tendency toward conformity, and many negative reviews have a more significant effect on intentions to booking on non-conformists. Finally, as a result of a meta-analysis, Babic et al. [36] found that eWOM influences sales and this influence is determined by the platform where eWOM is posted and by the product type.

Then, according to previous literature about eWOM, its influence on consumer online intentions are determined by valence, quantity, product type, source credibility and another consumer characteristic [104, 96]. However, what happens with the sender or reviewer characteristics? Has more influence on consumer purchase decision a recommendation posted by an OL than one posted by an anonymous reviewer (OCR)?

Since OCR generated by anonymous users can be an independent source of information [146], whereas eWOM posted by OL not, it is necessary to analyze how much influence or how reliable is OL versus OCR. Based on the previous information, the second hypothesis was formulated, considering that OL' recommendation has a more significant influence on online consumer decisions than OCR (**H₂**).

Online shopping experience- OSE-. There is plenty of research analyzing the influence of consumer expertise on the way consumers tend to use information with persuasive characteristics [15]. According to the literature, more consumer expertise means less impact from other consumers [147].

Online shopping experience (OSE) has been defined as a construct that represents a "psychological state, manifested as a subjective response to the e-retailer website" [148, p. 309], and it can be figured out whether or not a consumer would repurchase in that e-Retailer. Conforming to the literature, the better of an experience a consumer has with an e-retailer, the less consumer decision risk is perceived, and the more consumer satisfaction is getting. Therefore, this statement could be generalized for all e-retailers [149].

As a psychological state, OSE becomes an antecedent from future behavior in e-shopping context [150]. Since purchasing online entails many risks for consumers, they try to reduce it by consulting other consumer experience via online consumers reviews [151, 30] or choosing the most reliable retail environment that he had experienced before [149].

Therefore, the more experience a consumer has with a product, the less likely to be influenced by other consumer recommendations or OL eWOM because they will follow their criteria or experience [10].

This research defines OSE as the prior experience in shopping for products or services by the internet in e-retailers, and in line with previous literature revision, we hypothesized that the eWOM (OL or OCR)' influence on online consumer decisions is moderated by consumer OSE (**H₃**).

Figure 4.1 summarizes the three hypotheses of our research.
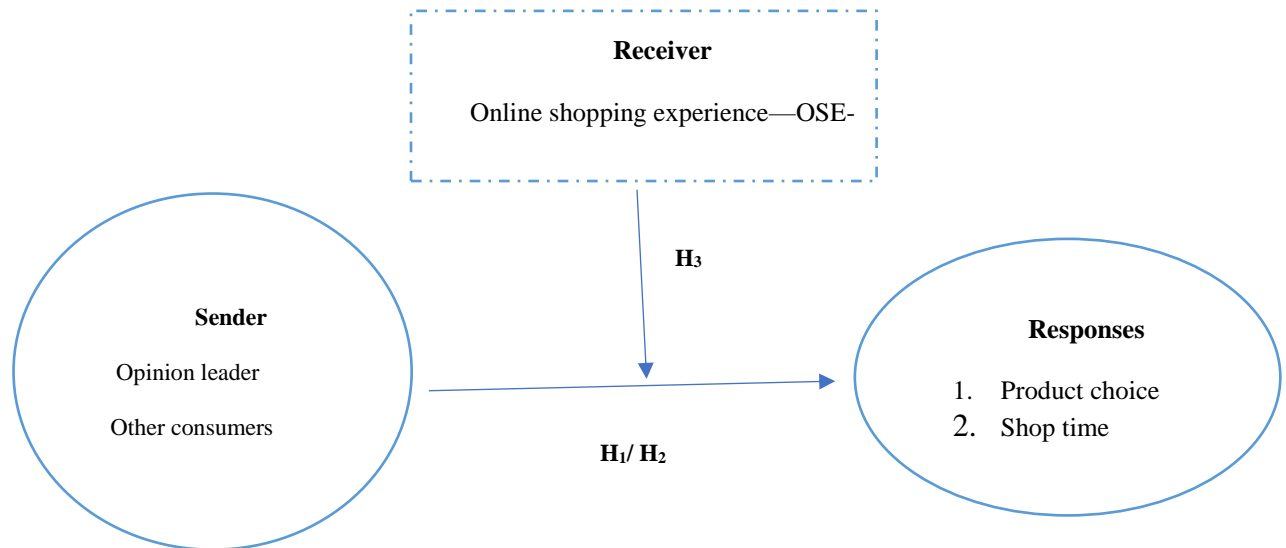
Figure 4.1 Research model.

4.3 Methodology

An online store was designed with the purpose of testing the hypothesis. Following are the

procedural details, the sample and the variables included in the study.

4.3.1 Experiment Overview

The data was collected from a convenience sample of 146 undergraduate students who took part

in a contest for a smartphone. Each participant was randomly assigned to one of three group

treatments (Table 4.1) in balanced groups about eWOM sender and control group.

An online store was deliberately designed for this research. We used three brands of streaming services (Netflix, HBO, and Amazon Prime). As an OL, we opted for Cristiano Ronaldo, and eWOM was selected from open forums about streaming services on the web (Appendix 1).

The instructions, on the front page, showed how people could browse on the online store and purchase or not, following their preferences, but no payment was necessary. However, in the end, they had to choose "Buy" or "Not buy" with the information available. Only those who make the correct decision, according to the specific context, took part in the smartphone contest.

The experimental design, as illustrated in Table 4.1, included two experimental groups and one control group. The online shopping experience was incorporated as a control variable.

The context for the research was the purchase of streaming services in a realistic online retail setting [92].

Table 4.1 Experimental Manipulations

		eWOM sender	
		OL	**Other consumer reviews**
		Condition 1: • Basic product characteristics • OL recommendation	**Condition 2**: • Basic product characteristics • eWOM
CONTROL GROUP	**Without eWOM**	**Condition 3** • Basic product characteristics	

4.3.2 Participants

One hundred forty-six undergraduate students voluntarily participated in the study (56.2% were female, and 43.8% were male). Concerning the age of the sample, 38.4% of the respondents were in the range of 18-22 years old, which is more frequent. All participants signed an informed consent form. The participants were recruited using convenient and reasoned sampling. At the end of the experiment, 146 of 150 participants took part in a lottery for a smartphone. Descriptive analysis (Table 4.2) was conducted to find respondents' demographic information and the eWOM seeker behavior tendency.

Table 4.2 Respondents' demographic profile (n=146)

		Frequency	Percentage
Gender	Male	64	43.8
	Female	82	56.2
Age	18-22	56	38.4
	23-27	48	32.8
	28-32	21	14.3
	>33	20	13.6
How long have you used the Internet?	Lest 1 year	0	0
	1 to 5 years	9	6.2
	More than 5	137	93.8
Have you shopped online before?	Yes	112	76.7
	No	34	23.3
Read review/comments before purchase?	Yes	115	78.8
	No	31	20.5

Respondents' information about the search for advice shows that 78.8% of respondents read reviews or comments before their purchase; 76.7% had shopped online before and, 93.8% had more than five years' experience using the Internet.

4.3.3 Materials

Appendix 1 shows the stimulus used in the experiment. The online store designed show three brands of streaming services (Netflix, HBO, and Amazon Prime).

The eWOM was selected from amazon.com and phonehouse.es. We selected six positives, and more replayed consumer reviews about the services included in this research. This number follows the criteria of [6] established that people read between two and six reviews before taking consumer decisions. For the OL' eWOM group, the most popular review was selected and attributed to Cristiano Ronaldo, who post it on his Facebook page.

4.3.4 Procedure

The experiment had three phases. In the first stage, the subjects were asked to complete an online questionnaire with demographic information that was part of the participant registration on the online store.

During the second stage, participants were randomly assigned by the system to one of three groups (OL'eWOM, OCR or without eWOM) in an online shopping store. All the participants were exposed into the online store, once registered, to the screen (See Appendix 1, part 1.), where the three brands of streaming services were presented with a photo and brand. Participants could choose one of them clicking on a picture. Then, according to the group that was assigned, the participant watched a product presentation like Appendix 1, part 2 or 3, depending on whether it was attached to OCR or OL group, respectively or only the product characteristics without eWOM. In this screen, two blue bottoms were showed; participants had to choose "Buy" or "Not buy" the product.

In the third phase, participants must complete the Leadership/Seeking tendency questionnaire of 12 items [17, 16]; all answers were mandatory to finish the procedure. In the end, a thanks message was showed, and participants can close the store page.

4.3.5 Measures

Independent variable. *Online reviews:* one group was shown reviews from an OL, and the other group was exposed to OCR. All reviews were extracted from free blogs online about streaming services. A control group without eWOM was implemented.

Control variables. Besides independent variables, we measured demographic variables (gender, age) and online shopping experience (in years). These variables were measured by an online questionnaire applied at the beginning and the end of the study. The valence, quantity, and product type were controlled but, in this research, we only analyze the sender influence following the parsimonious principle [124].

Dependent variables. There are two dependent variables: product choice (PC) and shop time (ST). PC was evaluated based on the final selection that the participant chose, by clicking on the proper button for that purpose; it was a dichotomous variable (Buy/Not buy). The other variable, ST was measured in seconds by the system [92, 152], and from the moment the participant clicked on the registration button after completed the registration questionnaire until they clicked on the "Buy" or "Not Buy" button.

Gupta and Harris [243] demonstrated that time spends in an online shopping activity is a good predictor for optimal decisions since it shows the level of interest to process information about product recommendations. In the same directions, Zichermann and Linder [152] established that

time spends by a gamer in some activity denotes the rate of stickiness or engagement with it, and it is a more reliable way to know consumer preferences than asking the player about it.

Time to answer, reaction time or latency of the answer are psychological variables used in previous studies to predict behaviors because are measuring cognitive activity in behavioral psychology and the digital context have become a way to measure preference for products or brands [153].

4.4 Results

The results of the study are presented in this section, organized according to the hypotheses planned. In the first part, the descriptive analysis is presented and then the inferential analysis to conclude with respect to the proposed hypotheses.

4.4.1 Descriptive Analysis

The descriptive analysis presented in Figure 4.2 shows that the group with eWOM posted by OCR have more influence on purchase decisions than OL's group. The 62% of the participants that buy the product were of the group with OCR and only 38% of the OL' eWOM group. The control group shows that almost 50% of participants bought the product and the other 50% did not;
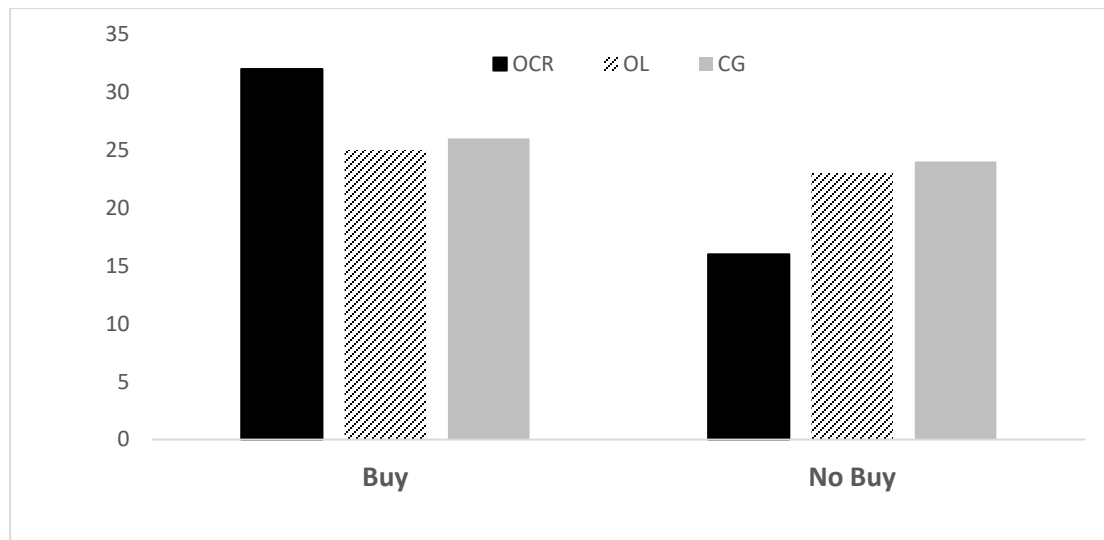
Figure 4.2 Consumer decisions according to treatment group. OCR= online consumers

review; OL = Opinion leader; CG = Control group.

Further analysis included the shop time than participants spent in the shopping decisions. We

assume that more time spent means that participants were reading and analyzing the

recommendations; then, we expected that it was correlated with the consumer decisions to buy or

not buy the product or service [152]. Figure 4.3 shows that participants from the OCR' group

spent more time (M = 82 sec; SD = 4.5; N =48) in the consumer decision than the OL' one (M =

61 sec; SD = 3.5; N =48) and CG (M = 57.9; SD = 2.3; N = 50), they followed more the OCR'

recommendation (75%) than the OL one (25%).
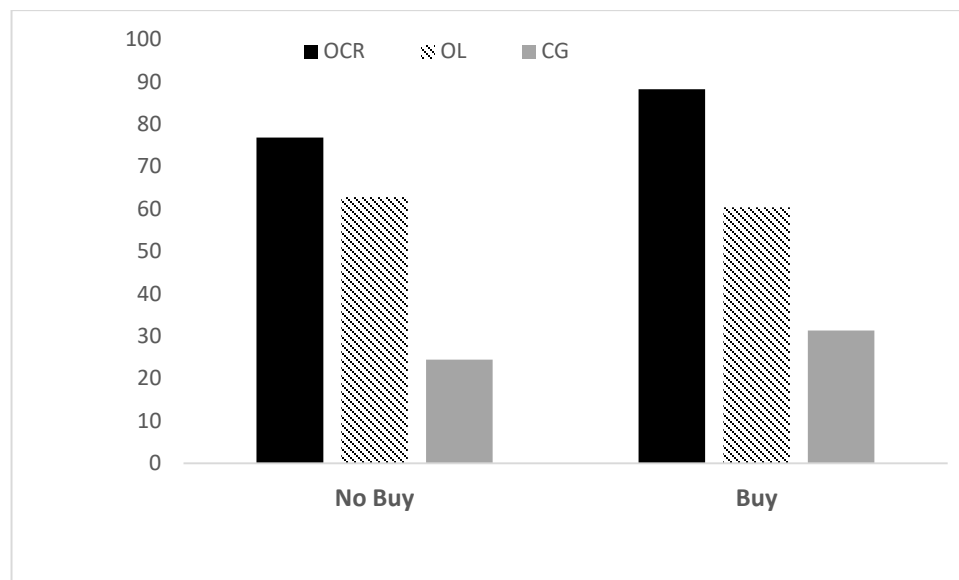
Figure 4.3 Shop time according to experimental groups and consumer decisions.

Table 4.3 shows the correlation matrix of the three key variables. "Shoptime" was positively correlated with OL (.433; $p < .005$); the time spent by the participant change depending the product was recommended by an OL or by other consumers. "Internet shop", years of shopping online experience that participant reports they have, was negatively correlated with OL (-.242; $p < .05$). Then, more shopping experience means less OL influence. The other way around happened with OCR (.487; $p < .05$); the most internet shopping experience, the more impact of OCR' recommendations.

Table 4.3 Correlation matrix

	Pearson Correlation	OL	OCR	SHOPTIME	INTERNET
OL		1	.023	.433*	-.242**
OCR		.023	1	.654*	.487**
SHOPTIME		.433*	.654*	1	-.244**
INTERNET		-.242*	.487*	-.244*	1
N					**146**

**. p < 0.05

4.4.2 Hypotheses Testing

In this section, it is presented in inferential analysis of the data, according to each independent variable, to examine the hypotheses proposed.

H_1. Social Influence. For testing the statistical significance of the difference between the time spent on the shopping process, a Nonparametric Analysis of Variance (N par Test) with the Omnibus Kruskal-Wallis Test between groups with OL' eWOM, OCR and CG were conducted.

The Kruskal- Willis test the null hypothesis that the mean of tree groups are equal. In this case, H_1 was not rejected (χ^2 (2, 144) = 20.514; .035, p < .05). Then, we can affirm that there is a difference between the means of the shopping time spent between the three groups were statistically significant, then the model is useful (ETA = .141) for evaluating the effect of the sender characteristics on consumer behavior [124].

H_2. OL versus OCR. To analyze in which groups the mean of the time was different a Generalized Linear Model with analysis of covariance was implemented (ANCOVA) because the comparison of groups and their interactions without standard distribution assumption for the dependent variable is possible [124, 125].

Table 4.4 shows the main results when OCR and OL group are compared. The difference between the mean of time spent on shopping was significant, and the group who spent more time was the one exposed to OCR. Then, when comparing each experimental group with the control group, the difference with the OL group was not significant (p > .01): alternately, OCR showed a significant difference (p< .05).

Table 4.4 Between groups analysis.

	Group	N	Mean Rank (sec)	(OCR-OL)	χ2 / p-value (OL-CG)	(OCR-CG)
Shop-time	**OCR**	48	82	8.46 /.012*		
	OL	48	61		.564 / .765	
	CG	50	57.9			4.98 / .034**

** p < .05

Since the result was not significant at 5% H$_2$ is not supported (.37 p > 0.05). That means that the mean of the shop time spent in the activity, for the OL and OCR groups were different to control group, but for OL group was less than OCR group, confirming the descriptive analysis (Figure 2) about OCR recommendation influence on consumer purchase behavior.

H$_3$. Online shopping experience as a moderator. Analyzing the model, when online shopping experience -OSE- is introduced to examine if this variable has any influence on the relation between eWOM sender (OL vs. OCR) and consumer behavior and interactions. The model, in this case, was significant (χ^2= 22.308. p< .000), and the parameters (Table 4.5) show that the direct effect of OL' eWOM was not substantial (.049); however, the interaction OL'eWOM*shop

experience was significant (.839; p < .05). On the other hand, the effect of OCR was significant (12.3; p< .00) as the interaction OCR*OSE. Therefore, H_3 was supported.

The analysis revealed that, when we include the variable OSE in the model and evaluate the treatment interaction, the effect of OL recommendation, by itself, has a relative relevance, and only with the interaction with OSE has an influence on consumer purchase decisions.

As stated in by Muller and Judd [154], a potential moderating is "either some stable individual difference variable, assumed not to be affected by the treatment, or else some measure of the context or situation under which the treatment is delivered" (p. 853). Thus, we might conclude that consumer online shopping experience is a moderating variable between eWOM sender (OL vs. OCR) and consumer purchase decisions (Figure 4.2).

Table 4.5 GLM analysis of Covariance -ANCOVA-. Parameters

Main effect and interactions	*df*	X^2
OL' eWOM	1	.049
OCR	1	12.3*
OSE	1	8.27*
OL x OSE	1	.839**
OCR x OSE	1	11.54*

*p < 0.000 ** p < .05

4.5 Discussion

This research analyzes which two forms of social influence, according to the sender characteristics (OL or OCR) has more impact on consumer purchase decisions. These types of

communication are the two most important sources of information about products or services in digital contexts [6].

Most of the time, previous literature about OL's influence on consumer purchase decisions are based on simulations [116, 155] or, on the diffusion effect of OL's [145, 99, 117, 94], or on their impact on purchase intentions [77, 114, 109]. In this research we analyze the OL's influence on consumer purchase decisions, using an experimental methodology, and in an online ecologic context.

On the other hand, the influence of eWOM on consumer purchase intentions has been widely studied [84, 15, 103]; especially the impact of eWOM regarding the product type and its valence [23] on consumer intentions. This literature has evidenced the role of eWOM on the consumer as a form of social influence [117]. However, less interest has had the analysis of eWOM source when the sender is an OL or OCR.

The two-step theory affirms that OL plays a central role in the diffusion of commercial information between his/her "every-day associates" [97], explaining why companies are looking for this kind of person to promote products [99]. However, with the rise of SNS and the Internet a new media has emerged, the eWOM [10]. A form of eWOM is the OCR, an anonymous person posts it on the web, and its influence on consumer decisions has to be documented [35]. Then, which one of these two kinds of social impact is more effective on consumer purchase decisions?

The first gap that this research fills was whether a recommendation or eWOM posted by OL or OCR has a significant influence on the change of consumer purchase decisions. This is not an obvious supposition since literature reports that eWOM can change attitudes, and sometimes,

those are used as predictors to behavior, even if not always accurate [151]. Then, it was necessary to analyze the eWOM influence on consumer purchase behavior [10, 35] experimentally.

The second contribution of this study is the empirical evidence that OCR, a form of eWOM posted by anonymous consumers, has a more social influence on consumer purchase decisions than eWOM posted by OL or influencers. According to Katz et al. [97], an OL has more and direct impact on consumer decisions than mass media; however, with social networking sites and electronic commerce, a more robust social influence source has emerged, the OCR, a form of eWOM that has been changing the way of consumer take decisions.

The credibility of the source explains the results. According to Tsao et al. [23], when eWOM is posted on an independent (third party) platform, it is more credible than when it is posted on a corporate one. In the same direction [86] showed that the adoption of eWOM in SNS is a function of credibility and usefulness of it. Then, even though lots of followers and highly connected people are more effective in message diffusion [136], they are not enough to change the consumer purchase decision, that it is, in the end, the objective of a digital communication strategy.

This result is consistent with Zhang et al. [52] who demonstrated that OL have less influence than crowd making trends in social media, and the results are explained by the imitation theory of Miller and Dollard [102]; it is more common that people imitate behaviors of people like them that celebrities.

The third main contribution is the empirical evidence that consumer online shopping experience moderating the influence of eWOM' source (OL vs. OCR) on consumer purchase decisions; the

more experience a consumer has the less influence of OL has, and the more influence the OCR has [156].

These results are in line with Cheung et al. [10] and Park and Kim [15]and show that in addition to the personal characteristics of the OL, the receiver characteristics, such as product expertise and online shopping expertise, play an essential role in the extent to which the OL recommendation influences other consumer decisions [58]. Moreover, our results further support the literature that demonstrates the relative influence of OL's [94]; in this case, the impact is moderated by OSE; then, for those with high previous OSE, an OL' recommendation is not enough to change consumer behaviors, but advice posted by OCR does.

4.6 Academic and Managerial Implications

The main results of this study are: (1) OCR is the most important source of information and has a real influence on consumer purchase decisions; (2) OL recommendation has a relative impact on online consumer decisions; and (3) the importance of the consumer online shopping experience as a moderator on eWOM influence.

If eWOM is a determinant of the consumer purchase decision, a new way of communication has emerged, and practitioner and researchers must include it in marketing strategies in the digital context. However, it is evident that eWOM, generated by consumers is not manageable by practitioners since it is posted freely by a consumer on social media or in forums online, as they do with OL or influencer recommendations [133]. Therefore, new ways of OCR management have to be implemented to understand consumer experience.

The results evidence that consumers not only are looking for other consumer recommendations before making consumer purchase decisions; this advice is affecting online consumer decisions. Practitioners will be most efficient in managing the eWOM appropriately about product or services than just paying for OL or influencer' recommendations. The use of OL's for product promotion and message diffusions can be a smart idea [136, 99], but it is necessary to segment the market according to consumer experience because only specific segments of people will follow OL advice.

The appropriate eWOM posted by anonymous consumer become a big challenge for practitioners. Each second, more than 20 billion of free posted reviews have been generating by consumers that want to share their experience about products and services [6], and this kind of communication has a stronger influence on consumer purchase decisions.

4.7 Limitation and Future Research Avenues

The research had some limitations that provide a starting point for novel research avenues. For example, it could be analyzed whether the OL/OCR influence can be different when eWOM valence is negative and when it is about a product or service. However, following the scientific principle of parsimony, this research shows relevant evidence of social influence according to the sender characteristic. Moreover, the study could be replicated in other contexts and with other OL/influencers. Finally, since the response was "buy" or not the product, but participants did not incur in any payment, the results could be analyzed with real sales databases and data science analytics.

CONCLUSIONS

The primary objective of this research was to analyze the influence of electronic-word-of-mouth –eWOM- on online consumer decisions. This form of communication media has become a revolution for consumers and business because of the massive and free way to spread a message about consumer experience to thousands or millions of other consumers [35].

More than 5, 500 million of new online reviews are being posted every day on Social Networking Sites –SNS- or on forums on the Internet [6]. Also, companies are hiring community managers to deal with the explosion of data trying to understand the consumer desires, inquiries or necessities [157]. However, how much influence has this kind of information on online consumer decisions?

This research is an empirical contribution to understanding this phenomenon. The first chapter of this research was a bibliometric analysis of eWOM literature; the second one, analyze the valence and product type characteristics of eWOM on Consumer Online Decisions –COD-. The third one, the sender characteristics of eWOM was analyzed (Opinion Leaders).

In Chapter one, a search in Scopus and Web of Science for the more relevant literature, published between 2010 and 2018 about this subject. SciMAT tools analyzed the literature recovery.

The main results show that eWOM is a timely subject that has the focus on understanding how this communication form changes consumer behavior in online context, but we found that little empirical evidence was found about this influence.

The bibliometric analysis let us understand the literature panorama about eWOM and depict the conceptual and structural theoretical context of this modern form of communication. Between 2010 and 2014, the most relevant theme was the "Online Community" that was created by Social Networking Sites or free forums on the websites. These communities became an important virtual space where people talk about preferences, feelings, and hobbies and, for researchers, it is a new context in which to analyze human behavior. According to Global Web Index [6], more than 80 percent of internet users have an account on Facebook, and people spend more than two hours per day on social media.

The topic "online communities" was associated with "online reviews," which is a form of eWOM and a vital source of information that consumers take into account before making purchase decisions [56, 57, 58, 59, 60, 61].

In the economic context, 80 percent of internet users between the ages of 25 and 34 purchased at least one product online in the last month and 75 percent said they check consumer reviews before purchasing a product or service [6]. This phenomenon explains the change in research for the period from 2015 to 2018, in which the focus shifted to the analysis of consumer purchase decisions, and eWOM influence on online consumer decisions [63, 35]. Moreover, the results show that the characteristic of the eWOM sender was a relevant variable that needs in-depth analysis.

The result of the bibliometric analysis was the input for design and formulate the experimental design to test the hypotheses that form part of the three other chapters.

Chapter two show the results of test empirically the eWOM influence on online consumer decisions. With an experimental field online, we analyzed if the eWOM characteristics as valence (positive or negative) and the kind of product (product or service) were determinant in the eWOM influence on online consumer decisions.

The results show that eWOM has a statistically significant influence on consumer purchase decisions and it influences stronger when the eWOM valence is negative. People follow the other consumer reviews, and when they were negative, people did not buy the product. This behavior was more frequent with services than with products, but in both cases were significant.

Therefore, the results highlight the importance of management of consumer reviews by marketers, so they can understand the reason for the comments and try to respond to them, because try to ignore them will be even more damaging to the corporate and brand image. Likewise, rather than attempting to increase positive comments, they should focus on managing the negative ones, since they have a more significant influence on the decision making of potential clients.

Chapter three the sender characteristic was tested. With an experimental design, we study who much a eWOM sender by an Opinion Leader –OL- is credible, and if this influence or is similar when it is about a product or a service.

The result shows that OL's influence on consumer purchase decisions only when the reviews are positive and about service. These results are consistent with the conclusions of Zhang et al. [52] and confirm a positive bias in consumer behavior. It shows that OL eWOM is useful when it is

related to an experiential good, and the valence of the message is positive, but not when it is about a search good [23].

Moreover, the evidence also shows that the OL eWOM itself does not have a significative influence on consumer decisions [116]. Besides, the influence is concerning the context: namely product type and message valence. A positive OL recommendation influences the consumer's decision to buy or not buy a product [103], but a negative recommendation affects the message's spread [19, 14].

In conclusion, the valence has a differential influence depending on if the eWOM is about a product or a service; or if an OL or other consumers have posted it. A service is more vulnerable to negative eWOM than a product. It is explained for their intangible characteristics, and because the consumer has not the possibility to trail the service before pay for it, and this supposes an increase of consumer risk for bad decisions. However, when an OL posts the eWOM, the positive valence is more effective in consumer purchase decisions than the negative one. When the one who writes the comment is another consumer, the relationship is the other way around; the negative message has more influence than the positive on the consumer purchase decision.

For that reason, in the digital era, an OL can be anyone who has thousands of followers. However, his/her influence is not only limited to spreading information, but it is determined by the kind of good that he/she is promoting and the valence of the message that he/she is sharing.

Consumers are increasingly warned about supposed leaders of opinion or *astroturfs* [158], so more than the number of followers, it is the authentic message that makes people not only follow an OL in social networks, but adopt their recommendations. Then, practitioner must do an

appropriate segmentation of the market if they want to use this kind of strategy to promote their products.

In chapter four, the influence of eWOM sent by an OL and by other consumers was comparatively studied. Taking into account that these two forms of promotion have become the main ones when it comes to knowing new products or brands [6], and that, the first one is paid by companies, while the second is generated freely and spontaneously by consumers, it was necessary to compare them and elucidate which the most influential in decision was making process.

The results allow us to conclude that OCR is more influential in online purchasing decisions than the recommendations of opinion leaders, this result was more forceful when the online shopping experience variable was included in the analysis. Therefore, the greater the experience on the part of consumers, the less influence of the opinion leaders' recommendations and the greater impact of OCR.

The foregoing has implications for both research and the design of digital marketing strategies. First, the results put, again, or perhaps, reinforce the importance of eWOM as a source of valuable information for decision making. As shown in chapter one, the trend in publications on this subject has shown a growing trend since 2010, not only to revolutionize the way consumers and business relate, but also to become a new variable that must be included in the study of consumer behavior.

Moreover, regarding the role and nature of the opinion leaders, the results challenge the role traditionally given to these public figures. With the digital age, almost anyone can access and

influence millions of followers on social networks. However, the scope of such influence is limited not only temporarily, but also in terms of the scope for modifying attitudes and behaviors. Following the theory of the double process of Katz and Lazarsfeld [97], it is possible that the new opinion leaders are anonymous people who can strategically reach (they are their social network) millions of people, modifying with their comments on consumer experiences, purchasing decisions.

For marketers, the results of this research become an input for the design of communication strategies and management of information freely generated by consumers, which allows them to correctly understand the needs, fears and desires that consumers are expressing. This information, more than being a threat, is the opportunity not only to improve products and services, but to reach your market segment individually and directly. It will no longer be enough to pay an opinion leader to advertise their products or services, it will be necessary to include the diversity of consumers that make up their target market.

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APPENDIX 1

Experimental stimulus
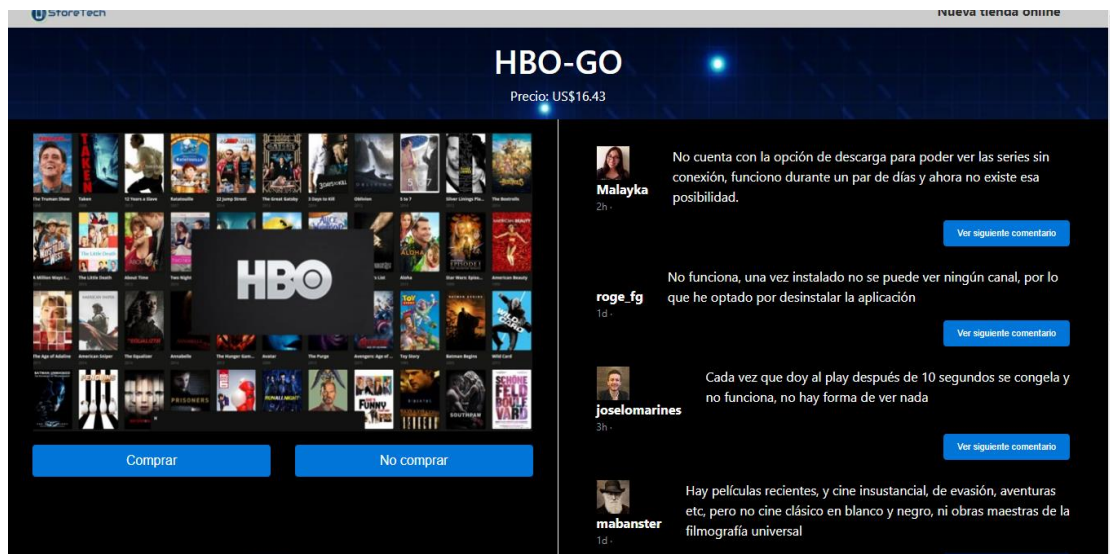
Services brands Consumer reviews example

Opinion leader' recommendation example

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