Does Brand’s Participation on Facebook Affect Positively its Brand Equity?

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Tese de Doutoramento em Ciências da Comunicação

Julho, 2013
Tese apresentada para cumprimento dos requisitos necessários à obtenção do grau de Doutor em Ciências da Comunicação, variante Comunicação Estratégica, realizada sob a orientação científica de Doutor João Sáàgua.

Apoio financeiro da FCT e do FSE no âmbito do III Quadro Comunitário de Apoio.
ACKNOWLEDGMENTS

I’ll never forget the words of Professor Jacob Goldenberg when he once asked me what the product of my PhD was. I replied that the dissertation is the product, but he promptly corrected me by pointing out that I am the product of this academic program.

While conducting my studies, I frequently remembered his words and how right he was. Moreover, no dissertation can ever put into words all of the knowledge one student gathers through her readings, talks with professors and mentors, talks with other PhD students, classes, conferences and seminar auditions, as well as other forms of participation. Moreover, no professor, book, or even research paper can fully teach us about perseverance, organization, curiosity, and academic dissatisfaction. In other words, how to be a true scholar. Only experience and social dynamics provide these lessons.

Therefore, I would like to thank the following people for their contributions to this dissertation through their guidance, support, or friendship:

First, I would like to thank my supervisor Professor João Sáàgua and my co-advisor, Professor Hasse Ferreira, who were both always very supportive. A special thank you to Professor João Sáàgua for encouraging me to expand my academic horizons, and also to Michael Baumtrog for his help and always insightful comments.

From the University of Texas at Austin, Professors Sharon Strover, Neal Burns, Zenzi M Griffin. Also, Karen Gustafson and Brian Armstrong. From Westminster University, Professors Alison Rieple and James Blythe. From King’s College of London, Professors Finola Kerrigan and Dirk Vom Lehn. Finally, from Columbia University, Professors Don Lehmann, Jacob Goldenberg, Oded Netzer, Leonard Lee, and Asim Ansari.

Last, but not the least, I would like to thank my brother Nuno and my grandmother Isabel, my two “aunts” Isabel (thank you for not being a quitter, tia Iz!), my friends Ana Isabel, Cris, Carlos, João, Jo Ri, Jorge, Lisa, Marisa, Paula, Paulo, Pedro, Rita, Rodrigo (especially for his useful comments in statistics), Sivan, Susana, Té, Yael, and many, many others, I thank you.
DOES BRAND’S PARTICIPATION ON FACEBOOK AFFECT POSITIVELY ITS BRAND EQUITY?

ANA MARGARIDA DA SILVA BEBIANO BARRETO

ABSTRACT

These days the use of social network sites by organizations is a fait accompli. However, a main issue remains unclear: what is the impact of brands’ participation in social network sites (SNS) on their brand equity?

To address this research topic five hypotheses were developed and tested. They were:

(H1) Users of SNS that follow the brand on these websites show more positive brand equity than users who do not follow the brand;

(H2) Brands’ participation in SNS produces beneficial changes in their relationship with their existing customers that follow the brand on SNS;

(H3) Brands’ participation in SNS contributes to the spread of positive "word of mouth" by the current brand’ clients that interact with it in social network sites;

(H4) positive "word of mouth" contributes to getting new users who will interact with the brand on the SNS;

(H5) Because they are online spaces of interaction, SNS are advertising spaces with low efficiency (i.e., with low values of click-through).

The main research question was address in three phases. First, a literature review and conceptual framework aimed at including the state of the art on four domains (brand equity, social network sites, social dynamics, and the spread of information) capable of containing an answer were performed.

In a second phase, the developed hypotheses that aim to answer the research question were tested through five studies - all of which are contained in Chapter 3. 3.1 analyzes the impact of brands’ participation in SNS on the brand equity of three groups (consumers that follow the brand on Facebook, consumers that do not follow the brand on Facebook, although they use the site, and consumers that do not use Facebook) by applying a consumer-based brand equity scale, based on the theoretical dimensions presented in chapter 2.1 and validated statistically. Using a netnographic methodology, chapter 3.2 assess the impact of a brand’s participation on getting positive WOM by the brand followers on Facebook. Chapter 3.3 tests the relation between WOM and new followers (or new likes) through econometric methods. Through the use of eye-tracking technology in combination with a questionnaire, in chapter 3.4 the main purpose is to determine whether Facebook users actually look at displayed ads, thus y testing the existence of the phenomenon “banner blindness”.. The study is used to ascertain the effectiveness of paid advertising and its comparison with the number of friends’ recommendations. Finally, in chapter 3.5, through the use of a survey distributed online to
brand followers, brand participation on Facebook was analyzed to determine if it benefits the relation between brand and consumers.

Phase three provides the confrontation and discussion of the theoretical analysis and empirical data. Besides confirming the five suggested hypothesis, the combined use of different methodologies chosen specifically for each goal is also shown to enrich the value of this work in both the academic and managerial domains.

**Key-words:** relationship marketing; brand equity; social network sites; social networks; social dynamics; word of mouth.
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Chapter I – introduction

1.1. Formulation of the problem of the thesis

The emergence of the Web 2.0 with its new features and functionality changed the traditional communication paradigm between brands and consumers and the “control” over what is diffused. Consequently, the relationship between brands and consumers was affected.

In order to survive and gain economic advantages, meaning, to maintain current customers and obtain new ones, now, more than ever, organizations should adopt relational marketing strategies and pay special attention to certain key factors, such as trust, loyalty, and customer satisfaction. When such strategies are successful they can lead to brand engagement and positive "word of mouth" (WOM).

On the other hand, the Web 2.0 has also brought new ways for organizations to inform and relate with their consumers. Online social network sites (SNS) represent a clear example of an effective digital communication tool, not only because they have won the preference of Internet users¹, but also because they allow companies, institutions, and public figures to establish close relationships with other users based on the interactivity that these digital social platforms promote. Moreover, in these online spaces the phenomenon of WOM develops, capable of influencing consumer purchase decisions more extensively than in an offline environment - in itself reason enough to attract the attention of communication managers.

Recently, within academia the growing interest in these contemporary social and commercial network sites has motivated the study of their impacts on various areas of research, such as privacy (Gross, Acquisti and Heinz, 2005), identity and reputation (Boyd and Heer, 2006; Walther, Van Der Heide, Kim, Westerman, and Tong, 2008), the role they play in maintaining relationships, on the accumulation of social capital (Choi, 2006; Ellison, Steinfeld and Lampe, 2007), etc.. However, there are few academic studies that have paid special attention to and provided input on

¹ Facebook, Twitter and Orkut are just some examples of these kind of social platforms that have been attracting a growing number of users all over the world.
the influence of SNS on the relationship between brands and consumers, in general, and on the WOM phenomenon in online spaces, in particular.

Still, from the academic point of view, the need to study SNS grounded on the topic of "new media" or "social media" is justified if we take into account the gradual introduction of this subject into world renowned programs at institutions such as Harvard, Columbia Business School, London Business School, and Stanford.

Moreover, it is the author’s strong conviction that the pertinence of the existence of such analyses is justified because the use of SNS by the consumers is already a frequent contemporary phenomenon with great social and economic impact. In addition, the presence of brands on SNS is now a fait accompli worldwide, and to study the impact of the Internet, particularly of these websites, from a communication perspective is as important as now as it once was to analyze the effect of radio and television in the same way. As more than one channel of mediated verbal interaction with unmatched features, the Internet is also a commercial space without temporal or geographical barriers that attracts more and more brand managers’ interest and involvement as indicated by the gradual shift of advertising budgets.

Therefore, this work will study the relationship between brands and their customers on SNS. Specifically, it will evaluate the effectiveness of brands’ participation on SNS through the lens of their brand equity from their consumers (problem of the thesis).

From a communication perspective, the obtained results may also contribute to a better theoretical understanding, based on empirical data, of the phenomenon of WOM in a digital environment.

In addition, this work aims to contribute to the definition of communication strategies, i.e., good practice guidelines in SNS, and to participate in the development of the theoretical and empirical knowledge of this promising media of our times.

Finally, it is the author’s goal to contribute valid and useful knowledge which can be used by both the academic community (helping in the enrichment of the state of the art) and by communication professionals.
1.2. Research questions

Nowadays the use of social network sites by organizations is a fait accompli. However one main issue remains unclear: what impact do these sites have on the way people perceive a brand?

Accordingly, this work proposes to study how relationships between brands and customers develop in SNS. The main research question of this work is: what is the impact of brands’ participation in SNS on their brand equity? (1).

In parallel, the questions of whether that participation contributes to the maintenance of existing brand customers and obtainment of new ones (2), as well as if it impacts consumer feelings, such as trust, loyalty, and satisfaction (3) will be analyzed. To do so, this study will be focused on consumer behavior towards the brand, contributing to the theoretical knowledge of relationship marketing literature (4).

As a secondary objective, but not least, it is expected that the findings based on empirical data will contribute to a better theoretical understanding of the phenomenon of "word of mouth" (5).

Finally, it is also one goal of this study to assist in the definition of communication strategies, i.e., guidelines of good practice in online social networks (6), and to participate in the development of the theoretical and empirical knowledge of one of the most promising media of our times (7).

1.3. Hypotheses development

In order to address the aforementioned main research question, the study will also seek to provide the necessary information to evaluate a number of assumptions, listed below, reformulated after an exploration of the scientific literature:

(H1) Users of online social network sites that follow with the brand on these websites show more positive brand equity than users who do not follow the brand;

(H2) Brands’ participation in social network sites produces beneficial changes in their relationship with their existing customers that follow the brand on SNS;
(H3) Brands’ participation in social network sites contributes to the spread of positive "word of mouth" in a digital context by the brands’ interactive followers;

(H4) positive "word of mouth" contributes to getting new users who will interact with the brand on the social network site;

(H5) Because they are online spaces of interaction, online social network sites are advertising spaces with low efficiency (i.e., with low values of click-through).

1.4. Dissertation structure

In order to address the aforementioned research question, three steps were followed which are reflected in the organization of this work. First, a literature review and conceptual framework, aimed at including the state of the art on four domains capable of containing an answer, were performed. The four domains are: brand equity, social network sites, social dynamics, and the spread of information. Part I of this work corresponds to this stage, which presents the academic considerations on the existing areas mentioned and their intersections.

Since academics and practitioners alike most often use journals to acquire information and disseminate new findings, journals represent the highest level of research (Nord and Nord, 1995).

Thus, a search in the JSTOR database, Google scholar, Emerald, b-on – Biblioteca do Conhecimento Online, ISI Web of Knowledge, and Wiley – Online Library was performed.

Additional papers (as well as conference papers and reports) and books that were not found in the search engine results, but were considered relevant to answer the defined research questions, were added to the analyzed material. Each article was carefully reviewed and separately classified according to the topics related to the defined research questions.

Moreover, through this work primary data, collected from a survey distributed to the heads of marketing and communication departments of the 90 largest Portuguese consumer goods and services companies, was also used.
In a second phase, which corresponds to Part II of this study, the developed hypotheses that aim to answer the research question were tested through five studies, all of which are presented in the third chapter of this work; one hypothesis per chapter section. Chapter 3.1 analyzes the impact of brands’ participation in SNS on the brand equity of three groups (consumers that follow the brand on Facebook, consumers that do not follow the brand on Facebook, although they use the site, and consumers that do not use Facebook) by applying a consumer-based brand equity scale, based on the theoretical dimensions presented in chapter 2.1 and validated statistically. Using a netnographic methodology, chapter 3.2 assess the impact of a brand’s participation on getting positive WOM by the brand followers on Facebook. Chapter 3.3 tests the relation between WOM and new followers (or new likes) through quantitative methods, such as the correlation matrix, the multiple regression model, the vector autoregression model, the Granger causality test, the unit root test, and IRF test (econometric models). In addition, the social contagion "bass diffusion" model was applied to better understand the adoption process stage of the analyzed brand. In chapter 3.4 the main purpose is to determine whether Facebook users actually look at the ads displayed (briefly, to test the existence of the phenomenon known as “banner blindness” on this website), thus ascertaining the effectiveness of paid advertising, and comparing it with the number of friends’ recommendations seen. In order to achieve this goal, an experiment using eye-tracking technology was administered, followed by a questionnaire. Finally, in chapter 3.5, through the use of a survey distributed online to brand followers, brand participation on Facebook was analyzed to determine if it benefits the relation between brand and consumers.

Due to the impossibility of applying these five different studies to the same brand, mainly because the sample used differs from study to study, various brands were analyzed, allowing for an overview of the use of the social network site Facebook by Portuguese brands (except on Study 4, where an American brand was analyzed).

Finally in Part III the confrontation and discussion (or the testing of the presented hypotheses) with the theoretical analysis and empirical data is provided.
In other words, this work starts with a theoretical study, then enters into an experimental analysis, and ends with the definition of a theoretical basis, which confirms, rewrites, or complements the baseline.

As such, besides answering the mentioned research questions the academic value of this work also lays in the combined use of different methodologies chosen specifically for each goal.

1.5. Contextualization and framing of the research topic

1.5.1. The combination of Information and Communication Technology and Marketing

New information and communication technologies (ICT) in general, and the Internet in particular, continue to grow in importance and to affect buying habits, entertainment, and user relationships. This phenomenon is not exclusive to one generation, but to all, with greater or lesser incidence. To illustrate, let’s consider the following data: from 2000 to 2012 the Internet grew 566.4% (data from internetworldstats.com), in 2010 there were 2.4 billion Internet users (idem), corresponding to 34.3% world penetration. With regard to the popular SNS Facebook, in March 2013 there were 665 million daily active users. Also, in May 2013, there were more than 554.000.000 Twitter users, and in the year 2010, 25 billion tweets were sent (Twitter).

Neglecting these facts may undermine the success of any organization, whether private or public, from the services industry, or consumer goods, a political party, or nongovernmental organization. This is because the Internet is not only a digital space where a growing world population joins, but it is also an easy tool for communication or business purposes. In addition, the adoption of e-business is positively related to four measures of performance: business efficiency, sales performance, customer satisfaction, and relationship development (Wu et al., 2003).

Effectively and efficiently using the Internet as a strategic channel requires a combined domain of various marketing practices. First, given the interactive nature of the channel, the Internet allows the establishment of interactive relations with
different audiences, large-scale, synchronous, or diachronic, individualized and personalized (interactive marketing). Organizations committed to talking with and listening to the public can enjoy the constant enrichment of their databases (database marketing), and may later, based on the collected information, target their audience and customize their future messages (direct marketing), and take advantage of various resources (like text, sound, video, and image) at low cost. These messages, along with a set of actions that aim at sharing and collaborative construction of the brand or its products/services with their audiences, will help to foster a sense of closeness between the brand and customer (impacting the trustworthiness of the latter). In addition, they also provide the ability for the brand to immediately detect and act upon situations of crisis or discontent, avoiding the powerfully negative WOM (relational strategy).

The perception that the future of marketing walks hand-in-hand with the evolution of ICT has aroused the interest of scholars worldwide who seek to explain this symbiotic relationship and to come out with new marketing concepts.

In 2001, Coviello, Milley and Marcolin added a fifth element to the theoretical classification of empirically validated marketing practices (transactional marketing, marketing database, interaction marketing and network marketing), made by the study group's "Contemporary Marketing Practices", in 1997. The concept introduced was e-Marketing (eM), defined as using the Internet and other interactive technologies to create and mediate dialogues between a company and its customers.

The designation of eM has been used deliberately in order to avoid the term “interactive”, so that there was no confusion with the concept of interaction marketing. eM includes and is based on interactive technologies related with the management of customer relationships, sales activity, research, analysis and planning (see Brady, Saren, Tzokas, 2002). Using the words of Reedy, Schull and Zimmerman: "They are all online or electronic activities that facilitate [the] production and marketing of products or services to meet the desires and needs of the consumer. The electronic marketing improves the overall marketing program that, in turn, enables the company's objectives in e-commerce "(2001, p. 26).
The eM concept combines within itself the practice of different types of marketing, such as database marketing, networking, and interaction marketing (Coviello et al., 2001), or, according to Rublescki (2009), the tools of traditional marketing with electronic resources. In my point of view transctional marketing can also be included in the eM definition, since the Internet allows the existence of commercial transactions. Therefore, the concept of eM combines in itself the four mentioned theoretical classifications, and at the same time exceed their sum, as it introduces the online activities.

Other denominations have been advanced to explain this phenomenon, like: cyber-marketing, digital marketing, communication and online marketing, web marketing (marketing done in a Web environment, according to Rublescki, 2009), and “one to one marketing”. Some have even suggested that the word marketing be altered to "markITing" so that could reflect the widespread use of ICT in contemporary marketing practice (Brady et al., 2002).

Another concept that combines relational marketing and the use of new technologies is "customer relationship marketing" (CRM). CRM is defined as "cross-functional integration of processes, people, operations and marketing resources enabled by information technology and applications" (Payne and Frow, 2005, p. 168). Although it is often confused with relationship marketing (Sheth and Parvatiyar, 2001), CRM is dedicated exclusively to the management of customer relationships, while relationship marketing can be applied to all stakeholders (Ryals, Payne, 2001; Chen, Ching, 2007).

To characterize marketing executed in an online environment as eM, dependent or driven by a relational strategy, seems to be conceptually the more correct option to describe the response to the demands of a 2.0 market, since it combines the traditional marketing mix ("4Ps"), with interactivity (dialogue), fostered by the databases (databases), and with the perspective and needs of current consumer ("4Cs"), guided by a relational strategy (Rublescki, 2009). In fact, the verification of the increasing use of eM by organizations and the reduced use of traditional methods makes the practice of eM a fait accompli nowadays, which means that eM can be seen as an established practice in most companies and no longer a novelty.
For Brodie, Winklhofer, Coviello, and Johnston (2007), the success of eM comes from its coexistence with traditional practices, rather than it emerging as an independent practice.

In short, new technologies have changed marketing practices and traditional concepts and practices are no longer sufficient to explain this new reality (Mintzberg et al., 1995, Bruce et al., 1996; Venkatesh, 1998).

1.5.2. A new communication paradigm

The Internet is not only important for communication practitioners and academics because it has emerged as a new way to do marketing, but also because it has contributed to the empowerment of consumers and to the access of more control over information.

In the early days of the Internet, communication between organizations and users followed a communicational model represented by the "one-to-many" model. That is, the organization produced the message and the target received it; the organization informed and the target was informed.

In 2004, a new terminology came into our lives, coined by Dale Dougherty, and popularized by O’Reilly Media and MediaLive International2 intended to designate a second generation of communities and services based on Web platforms or social networks: the Web 2.0. New softwares with odd features were included to the existing supply (like blogs, wikis, podcasting, social network sites, etc.), promoting participation and interaction among users in equal circumstances. Consequently, and more or less at the same time, appeared the concept of Web 1.0, referring to the previous generation.

Many authors have tried to create a complete definition for the term Web 2.0, but there has been little consensus about where 1.0 ends and 2.0 begins:

“In one sense, it doesn’t really matter that this bright line has been so elusive or that some savvy marketers simply use the label to distance themselves from the failures

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of Web 1.0 companies. That the term has enjoyed such a constant morphing of meaning and interpretation is, in many ways, the clearest sign of its usefulness. This is the nature of the conceptual beast in the digital age, and one of the most telling examples of what Web 2.0 applications do: They replace the authoritative heft of traditional institutions with the surging wisdom of crowds” (Madden and Fox, 2006, p. 2).

What is unquestionable is that the Web 2.0 represents a technological transformation, a new qualitative aspect of the Internet. What distinguishes one Web from the other is user behavior that evolves from a passive player to an active player leading to the transition from a production era to a collaboration era. This collaboration quickly became so prominent that, based on the Web 2.0, Time Magazine announced “You” (as in each and every one of us) as “Person of the year” in 2006.

Therefore, to the "one-to-many" communication paradigm was added the pattern "many-to-many", and the relation between brands and customers had to be rethought. In other words, information disseminated in the digital space ceases to have only one source, controller and selective, begins to have multiple, with or without anonymity; the society of information gives way to the society of knowledge; the era of production to the era of collaboration.

For Meadows-Klue (2008) “within the Web 2.0 DNA, there is the creation of platforms that connect people together (social networks), the ability to produce and then share content with others (social media), the success in architecting frameworks for participation (rather than producing all the content), and extracting and processing some of a community’s knowledge and then sharing it back (collective intelligence)” (p. 247).

The features of Web 2.0 make it an important commercial medium and marketing environment (Hoffman and Novak, 1996), quite different from the traditional channels. This is, first of all, because it allows a unique form of interactivity between people and computers in a many-to-many communication environment (Hoffman et al., 1995). Second, consumers experience a state of “flow”, i.e., an optimal experience, “a state of concentration so focused that it amounts to absolute
absorption in an activity” (Csikszentmihalyi, 1990, p.1). In fact, “flow is a central construct when considering consumer navigation on commercial Web sites” (Hoffman and Novak, 1997, p.44). Third, consumers have experiential (e.g., “netsurfing”) and goal-directed behaviors in the process of network navigation (e.g., “online shopping”) that compete for consumers’ attention.

As a result, in the complex web of the network of the networks, users realized that their "voice" can be transmitted easily and free of charge, and, most importantly, be heard by many without geographical barriers. This loss of control over the information disseminated by companies in relation to their brands and themselves brings a new consciousness to Internet users – one that is selective, critical, and informed and that demands to be heard and demands greater transparency on the part of organizations.

The combination of these two factors (loss of control of information disseminated and the empowerment of customers/Internet users) becomes indispensable in the application of a relational and interactive strategy between organizations and their customers with the support of new information and communication technologies.

1.5.3. Relationship Marketing

In the Web 2.0, companies have also found a tool that allows them to establish "one-to-one" communication with their target, and to know their needs better. As a result, organizations have less excuses to act without taking into account the opinions, beliefs, and feelings of consumers, thus reinforcing the need for a relational strategy between them.

This shift from transactional marketing focus, represented by the marketing mix (where the goal is to increase market share and guidance is given to the product), to relationship marketing (RM)(where guidance is given to resources and their strategic capabilities with the aim of creating value and customer satisfaction), emerged from the need to initially supplement and then replace a simplistic model – which was incomplete and not sufficiently oriented towards the market and that also ignored
the human factor (Grönroos, 1994; Sánchez Gil and Mollá, 2000; Constantinides, 2006). RM is not a new approach, for it was planned for more than three decades (see for instance Grönroos, 1996) and the term was already being used in 1983 by Leonard Berry, in his book “Relationship Marketing” to explain a new way to "attract, retain and - in the multi-service organizations – enhance[e] customer relationships" (p. 25). Research on RM began in the context of business-to-business (B2B) (Morgan and Hunt, 1994) and in the service industry (Egan, 2003). In fact, in the 1970s two marketing schools were pioneering in conceptual contributions to the RM approach - the Nordic School of Service, an expert in marketing services, represented by the researchers Christian Grönroos and Evert Gummson, among others; and the Industrial Marketing and Purchasing (IMP) Group, geared to industrial marketing, which highlights the work of the investigator Håkansson. Only later was RM extended to the market of consumer goods in order to prove the validity, not only of consumer-company relationship, but also that of consumer-brand.

According to Blomqvist, Dahl, and Haeger (1993), in RM each customer is considered as an individual or unit, the company’s activities are predominantly targeted at existing customers based on interactions and dialogues, and the company aims to achieve profit through decreasing the turnover of customers and strengthening relationships with them. In the words of Berry (2002), RM is “a philosophy not only a strategy, a way of thinking about customers, marketing and value creation, not just a set of techniques, tools and tactics” (p. 73).

Many other definitions of RM have been presented over the last years which have questioned whether it is a new area of marketing, or a new strategy, paradigm, or school. Some of these descriptions can be found in a compilation by Gummesson (1999).

It seems clear that RM guidelines suggest a change in marketing direction in favor of creating and establishing relationships that go beyond the transactional. However, it

3 Constantinides also adds other factors responsible for the weakness of the transactional approach.
may be radical to say that RM emerged as a new paradigm that replaced the previous one.

It is true that traditional marketing needed to be revised or even replaced by a more current strategic and operating vision, one that is more realistic and effective or, as suggested by Gummesson (1999), for a new concept that focuses on the value of relationships and interactions. It is equally certain that in this sense relationship marketing emerged as a long-sought solution. Still, it is wrong to think that traditional marketing, in an operational perspective, as a paradigm, is entirely inadequate or has been entirely replaced. The combination of the four inter-relational factors of the marketing-mix (promotion, placement, price, and product) continues to make sense today. Moreover, the study by Pels (1999) discovered that firms employ a marketing approach that involves the joining of traditional marketing practices with the relational. More recently, Brodie, Coviello, and Winklhofer (2008) claimed it to be possible to find a combination of different marketing practices and that successful companies are those able to be flexible and adapt to different opportunities. In other words, in practice, business-to-consumer approaches can be both relational and transactional, depending on the consumer or the product category (Garbarino and Johnson, 1999; Szmigin and Bourne, 1998). This means that RM, up to now, has not became a paradigm. What could be said instead is that marketing is going through a paradigm shift and RM is a driver of that shift, but not the only one.

Therefore, RM should be viewed as a marketing strategy that proposes the transfer of a self-centered management to a systemic view that places the organization as a network of relationships within which interactions are established (as a society).

With RM the costumer is no longer seen as part of an anonymous homogeneous mass but rather ascends to the position of an individual seen as a collaborator and a co-producer. Following this idea, Wind and Rangaswamy (2000) propose the concept of "customerization." As mentioned by Gummesson in his book Total Relationship Marketing (2008), the “RM/CRM spotlight is on the individual, on the segment of one. It’s one to one marketing. But focus is also on groups of like-minded people, affinity groups. The group members share a common interest, they want a
relationship with the supplier, its products and services, and even with each other” (p. 16).

This unique relationship between brands and individuals is inimitable by the competition, providing an added value to the product or service and a competitive advantage to the organization.

For this to happen, companies have to be prepared to build and maintain a win-win relationship that both players want while knowing beforehand that the results are not immediate. Moreover, companies must take the customers’ reasons to participate into account in this emotional dialogue. That is, the factors that contribute to engagement with the brand, specifically trust, loyalty, and satisfaction. In fact, studies show that in general the longer the relationship, the greater the profit. This is due to two effects resulting from loyalty: reduction of marketing costs and increase of customer share (Gummesson, 2002). To support this idea, Gummesson (1999) introduced the concept of Return on Relationship (ROR), a net financial result obtained in long-term relationships with the network of the company.

In order to accomplish the defined goals, companies need to understand that they should listen to and know the target audience, as well as monitor and learn to adapt to social change. In doing so marketers will be able to get economic advantages (Reichheld, 1996; Blackston, 2000; Winer, 2001; Dowling, 2002), retain their customers and convert them into brand ambassadors, who will support the organization in obtaining new clients.

Thus, brands should no longer be seen only as properties of companies (Pino, 2007a). Rather it become necessary to have strategies, which may not necessarily generate more immediate sales, but that may cause an attitude of approach between the public and the brands (Pino, 2007b).

According to Ndubisi (2003) the only sustainable growth strategy for an organization is through a mutual symbiotic relationship with customers, which will allow them to understand customers’ needs more clearly and to create added value to the organization’s products/services. This way, there will be increased customer
retention and long-term relationships that can lead to higher revenues and reduced costs (Gummesson, 1999, p. 7).

The application of this relational approach should not be uniform but flexible to each case; it should be an approach, which can be deployed at different levels of the relationship and adapted to the audience (in form and in message) and to the new times.

By way of example, and using the words of Meadows-Klue (2008), "relationship marketing for the Facebook generation requires thinking and acting differently" (p. 245). The modification of the traditional roles of sender and receiver in the context of the Internet has changed the tone used to talk to customers. McWilliam (2000) adds that communication managers need to understand the foundations of dialogue that could lead to a strong relationship and redefine their own messages in the online context. The communication should no longer come from above, but from the same level. Companies should talk to their customers as friends do. “When brands talk about relationships in marketing, and searching for the “love” they want customers to share, most do this through the lens of a relationship between parent and infant. But now our infant has grown up” (Meadows-Klue, 2008, p. 250). Companies are the ones that must adapt to customers and not the reverse (Wind and Mahajan, 2001).

Thanks to the development of new technologies, it is now easier to apply a strategy of RM in the consumer products industry and not just in the service industry, in the B2B relationship or within an organization, i.e., with workers.

Even though it is a strategy that aims at the growth or consolidation of an organization, it is wrong to think that relationship marketing is a foolproof recipe that can be applied blindly in any context or with any recipient. That is to say that the investment made in different contexts and with different targets does not imply obtaining similar results (Adjei, Griffith, Noble, 2009). As suggested by O'Malley and Tynan (2000), the expectation of getting an exclusive relationship may prove to be a fallacy. Even the possible value of revenue that can be obtained by a client (customer life value) has been called into question (Sheth and Kellstadt, 2002) revealing that some customers are not profitable in the long-term scenario (Reinartz
and Kumar, 2000) and that RM can have diminishing returns (Hibbard, Brunel, Dant, and Iacobucci, 2001).

This has made considerable impact on the applicability and feasibility of a theoretical framework of RM from the standpoint of the consumer. As regards Fournier et al. (1998, p. 43) "relationship marketing is powerful in theory but problematic in practice." However, even the 4Ps can be powerful in theory but problematic in practice.

It is up to companies to have the sensitivity to determine the best measure to be adopted and to know how to prepare the organization as a whole, to respond before, during, and at the end of the relationship. It is also necessary to understand that the results of RM require time to determine. Finally, relationship marketing, to be effective, needs to take into account the relational mood of consumers.
Chapter II – Literature review and conceptual framework building

2.1 Brand equity

The word brand comes from the Old Norse word *brandr*, meaning burning, referring to the practice of producers putting their mark on their animals or products using hot iron, in order to distinguish them from other animals or products. This was done for commercial reasons, specifically to guide other peoples’ choices, by identifying and differentiating a product or service through a unique composition of visual elements - name, logo, slogan, colors, and design scheme - that compose a brand, so it can be easily remembered and/or recognized by the public.

When the market became increasingly competitive and product or service characteristics, price, and distribution became very similar in the market, the brand was also used to reflect the mission of the organization and to represent its personality – once again, to gain distinction. Consequently, brands started to deliberately express emotions and to establish associations with positive feelings, with the expectation that the aimed target would identify with it, leading to preference.

The literature on brand definitions is plentiful. Among others, the definitions proposed by Ambler and Keller are two of the most frequently quoted. For Ambler (1995), “a brand is a bundle of functional, economic and psychological benefits for the end-user”. According to Keller (1997) a brand is a distinctive name with which the customer has a high level of awareness and a will to pay either higher than otherwise average prices or make higher than otherwise purchase frequency. Kalakumari and Sekar (2012) describe the analyzed concept as a seller’s promise to deliver a specific set of features, benefits, and services consistently to the customers; a collection of images and ideas representing an economic producer; more specifically, it refers to the concrete symbols such as a name, logo, slogan, and design scheme developed to represent implicit values, ideas, and even personality and to create associations and expectations among products made by a producer. In

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4 11.01.2006. “MarketingMagazine.co.uk”.
addition, brands are a construction produced by a public or private organization; a symbol that can be perceived in different ways by different people, based on rational and emotional reasons, and also on the personal characteristics of the receiver; hence a brand is a subjective, intangible, and unique resource.

This perception of what a brand is represents the equity of a brand. Using the words of Jameson (2010), brand equity is “a set of assets linked to a brand’s name and symbol that add value”. For Lemon, Rust, and Zeithaml (2001) brand equity represents the customer’s objective assessment of the utility of a brand based on perceptions of what is given up for what is received. It is a subjective and intangible assessment of a brand, built through image and meaning. Aaker (1996) defines brand equity as assets or liabilities associated with the brand that add to, or subtract from, the value the product provides. Finally, for Kalakumari and Sekar (2012) “brand equity is essentially an expression of a brand’s value or strength. It is also known as brand resonance, brand power or some other euphemism. Brand equity can be measured for product brands, service brands as well as corporate brands. Brand equity is an intangible asset that depends on associations made by the consumer” (p. 188 and 189).

A strong brand brings benefits to any type of organization, since it is an asset that can be sold or leased to other companies. Besides, it can have a positive effect on consumer preference and purchase intention (Cobb-Walgren et al., 1995), attract new members and make the existing ones loyal, allowing greater margins, more inelastic consumer response to price increase, and more elastic consumer response to price decrease (Barth, Clement, Foster, Kasznik, 1998). A strong brand can attract cooperation contracts and make brand extensions possible, and can also produce resilience to product-harm crisis (Dawar, Pillutla, 2000). Furthermore, it can produce expectations and emotions, and thus help consumers making shopping decisions or encourage them to recommend the brand to others. Finally, a strong brand can lead to the perception of quality (Kalakumari, Sekar, 2012).

On the other hand, negative brand equity occurs when the consumer is willing to pay more for a generic brand than for a branded one. Sometimes a negative brand reputation may even be responsible for negative brand equity (Kalakumari and
Sekar, 2012). For that reason, having positive brand equity becomes one of the goals for any private or public organization with a brand. That is, having a brand that is remembered, consistent, and recognized among other brands; that has a strong reputation of quality, integrity and transparency; and, above all, a brand that is liked and provides positive experiences to the consumer/client, with which the target identifies and wins their preference.

Essentially, brand value follows the following chain: marketing program investment leads to awareness, associations, attitudes, attachment and activity (customer mindset). Consequently, the customer mindset leads to price premiums, price elasticity, market share, expansion success, cost savings, and profitability (market performance), which in turn leads to stock price, and market capitalization (shareholder value).

However, it should be noticed that not all marketing programs result in increasing the brand value. As mentioned by Barth, Clement, Foster, and Kasznik (1998), sometimes these programs can have a minimal effect on sales and, worse turn away existing or potential customers.

### 2.1.1. Brand Equity and Brand Value

"Not everything that counts can be counted and not everything that is counted counts."

— Albert Einstein

It is important to emphasize that brand equity and brand value are not the same thing, though they are two intricately linked concepts.

According to Barth, Clement, Foster and Kasznik (1998) “brand values arise from the present value of future cash flows, or earnings, expected to be generated by the firm’s brand name”. In other words, it is “the net present value of future cash flows from a branded product minus the net present value of future cash flows from a
similar unbranded product — or, in simpler terms, what the brand is worth to management and shareholders” (Tiwari, 2010).

For Barth, Clement, Foster and Kasznik (1998), brand value estimates are significantly positively related to prices and returns (which is why, the brand value estimations capture information relevant to investors) and significantly positively associated with advertising expenses, brand operating margin, and brand market share. However, it is not significantly positively related to sales growth.

The same authors suggest that the value of a brand comes from two factors:

1. Net brand-related profits: estimated after tax operation income of a brand minus what could be earned on a basic non-branded version of the product.

2. Brand strength multiplier (or “Financial World Methodology” based on the Interbrand model), which entails seven components: Leadership – a brand’s ability to influence its market; Stability – the ability to survive; Market – the brand’s trading environment; Internationality – the ability to cross geographic and cultural borders; Trend – the ongoing direction of the brand’s importance to its industry; Support – the effectiveness of the brand’s communication; Protection – the brand’s owner’s legal title.

On the other hand, brand equity is described as a set of perceptions, knowledge, and behavior of the customers that create demand and/or a price premium for a branded product. That is, a set of elements such as brand associations, market fundamentals, and marketing assets that help distinguish one brand from another (Tiwari, 2010) and represent what the brand is worth to a customer.

Therefore, the brand equity concept should also be seen as an estimation of the brand value, since changes in brand attitude are associated with stock return (Aacker, Jacobson, 2001), having a direct impact on financial results (however, it should be noted that changes in brand attitude are not immediately reflected on changes in accounting performance). This way, non-financial measures can provide incremental information to financial data, being able to predict future earnings (not immediate ones) and, thus, the firm’s value. Consequently, the ultimate goal should
be to understand how to leverage equity in order to create value, given that one impacts the other.

In this work, since the focus will be on the value of a brand from the customer’s point of view, that is, the way the customer perceives the brand and how he/she behaves towards it, the object of analysis of this research will be the brand equity.

2.1.2. Brand Equity Measurement

Concerning the equity measurement of a brand, there are four main perspectives in the current literature (described below) that divide researchers and practitioners: financial-based, customer-based, a combination of the first two perspectives, and the product-market-based perspective.

As to the question of which model best describes or calculates the equity of a brand, the answer is still controversial, both in the literature (Perrier, 1997) and in the commercial world. First, accounting measures cannot adequately explain a firm value, since they do not include intangible assets, such as brand, information technology, or R&D capabilities (Acker and Jacobson, 2001).

On the other hand, as was shown above, brand equity represents a perceived and subjective value given by the customer. Analyzing the factors that influence that perception can only give an approximate value of a brand, and are insufficient in determining the brand’s economic value, since they don’t give a clear link between the specific marketing indicators and the brand’s financial performance (Lindemann, 2003).

Considering the mentioned differences between the concepts of brand value and brand equity, it seems appropriate to infer that the financial-based measurement makes more sense when trying to evaluate the brand value, and that the consumer-based methods fit better when determining the brand equity.

In this sense, and in the context of the proposed main research question (whether brand equity is affected by the brand’s presence in an online social network), the selected approach for this research is the consumer-based brand equity.
Nevertheless, for the sake of overall distinction, each approach is succinctly described.

- Financial perspective:

The financial or firm-based perspective discusses the financial value brand equity creates to the business, by evaluating the brand equity based on the costs, by determining the price premium commanded by a brand over a generic product, and by considering the expenses (Kalakumari and Sekar, 2012). Therefore, in this approach the evaluation of brand equity is based on equity evaluation.

Regarding this approach, Simon and Sullivan (1993) proposed an evaluation based on the financial market estimates of profits (value) attributable to brands. In their model, the value of the intangibles is calculated by subtracting the replacement cost of the tangible assets from the market value of the firm (market capitalization plus the market value of debt and other securities). After that, the value of the intangible assets is broken down into three components: brand equity; non-brand value, that reduces the firm costs (e.g. R&D, patents); and industry (e.g. regulations).

The brand equity component is further broken down into two components: the demand-enhancing component (calculated using increased market share) and a component that provides for diminished marketing spending due to the brand’s establishment (essential for market entry and for the brand’s advertising expenditure, relatively to that of its competitors).

Market share is broken down into two components, one for the brand and the other for non-brand factors. The non-brand market share refers to the company's share of patents and research and development (R&D) share. The market share attributable to the brand is a function of the order of entry and the relative advertising share. The reduced marketing costs are decisive for market entry and for the brand’s advertising expenditure relative to that of its competitors (Abratt and Bick, 2003).
- **Consumer-based brand equity:**

Other researchers, considering the consumer’s point of view, believe that the value of a brand lays on subjective perception and for that reason they have proposed consumer-based brand equity (CBBE) models that do not attempt to give a financial value to brands but grounded in cognitive psychology, evaluate the behaviors and attitudes of consumers that have an impact on the economic performance of the brand.

According to Christodoulides and Chernatony (2010), CBBE can be defined as “a set of perceptions, attitudes, knowledge, and behaviors on the part of consumers that results in increased utility and allows a brand to earn greater volume or greater margins than it could without the brand name” (p. 9).

Therefore, a variety of perceptual measures which are believed to influence buying decisions and behaviors are considered, such as different levels of brand conscience, knowledge, preference, familiarity, relevance, specific image attributes, buying decisions, satisfaction, recommendation, etc. It should be noted that not all authors contemplate the same assets when it comes to measuring brand equity from a consumer’s perspective, which explains why it is possible to find many consumer-based models in the literature.

- **Combined perspective:**

For Kapferer (2004) “a brand is a tool for business. It exists only in so far as it creates a profitable business. As a consequence, a brand that does not make it possible to create a profitable business has no value. In short, it is time to link the brand and the economic equation” (p.14). This act of combining a financial concept (equity) with a marketing-based notion (brand) is symptomatic of a growing awareness of the financial value of brands.

The same author also claims that the use of the term “equity” attached to a brand refers to an asset, built over time, and for that reason “for the sake of precision one should speak in fact of brand assets, not of brand equity” (p. 447).
Kapferer attempted to link both the financial and the cognitive approaches of brand equity. In other words, to link consumer-based brand equity dimensions (or “brand assets”) to brand value (net discounted cash flow attributable to the brand after paying the cost of capital invested to produce and run the business and the cost of marketing) through CBBE consequences. “After all, the brand is a tool for increasing business” (p. 448).

Furthermore, Kapferer states that irrespective of a brand’s reputation, image, preference factors, and loyalty the brand has no value if the company does not produce an excess profit capable of paying off the existing assets, whether they are tangible or not. In brief, reputation and image do not constitute value per se if they do not translate into profits and financial benefits. Even if a name attracts consumers, it does not guarantee future profits. Or, even if a brand is capable of inducing a consumer to pay more for a product, but the price does not cover the cost, then the brand has no value.

The model developed by Motameni and Shahrokhi (1998), called “Global Brand Equity” (GBE) is a different example of an approach that links both the financial and customer-based perspectives. The aim of this model is to estimate brand equity and show its sources of value by using an interdisciplinary approach that is able to quantify value components and apply financial techniques.

Another example of an advocated combined model was developed by Dyson, Farr, and Hollis (1996) called the “Consumer Value Model”. This model aims to predict transactions in order to bridge the gap between the intangible perceptions and the tangible revenues generated by a brand. This perspective was developed into the “Brand Dynamics System” (later evolving into MillwardBrown’s brand equity tracking method).
- Product-market-based perspective:

There are different methods to assess the brand’s performance in the market place, including market share, relative price (Chaudhuri and Holbrook 2001), share of category requirements (Aaker 1996), market share adjusted by a “durability” factor (Moran 1994), the constant term in demand models (Srinivasan 1979), the residual in a hedonic regression (Hjorth-Andersen 1984), or an economic theory-based measure of the difference between the brand’s profit and the profit it would earn without the brand name (Dubin 1998). However, the most commonly used is the price premium.

This method aims to assess the impact of brand equity in the product market by calculating the additional income or profit that is generated as a result of the differential selling price between a branded product and the corresponding generic (non-branded or private label) product (Barwise et al, 1989). In other words, the ability of a brand to charge a higher price than an unbranded equivalent charges (Aaker 1991, 1996; Agarwal and Rao 1996; Sethuraman 2000; Sethuraman and Cole 1997).

Ailawadi, Lehman and Neslin (2003) have proposed a similar approach where the revenue premium is an outcome measure of brand equity and consists in the revenue (i.e., net price × volume) between a branded good and a corresponding private label:

(1) Revenue premium\(_b\) = (volume\(_b\))(price\(_b\)) - (volume\(_pl\))(price\(_pl\)).

After adding to the equation some other factors (the marketing mix of both the brand and its competitors, the firm’s previously existing strength from its corporate image, product line, research and development (R&D), and other capabilities), the revenue premium model changed to

(2) \(E_i = g_i(M_j, P_j, F_j, C_j, M_k, P_k)\),

where,

\(M = \) marketing mix,
\[ P = \text{price}, \]
\[ E = \text{equity}, \]
\[ F = \text{preexisting firm strength}, \]
\[ C = \text{category characteristics}, \] and
\[ j \text{ and } k = \text{indexes of brands } j \text{ and } k. \]

After considering the competition factor (and their marketing mix decisions) the model gets a new appearance:

\[ R_j^* = S_j^*P_j^* = f_j(M_j^*, P_j^*, M_k^*, P_k^*, M_j^*E_j^*, P_j^*E_j^*, M_k^*E_j^*, P_k^*E_j^*, E_j^*)P_j^*. \]

However, if brand \( j \) does not have a brand name, say it was a private label, then the model would be:

\[ R_j^{**} = S_j^{**}P_j^{**} = f_j(M_j^{**}, P_j^{**}, M_k^{**}, P_k^{**})P_j^{**}. \]

Therefore, as the authors stated, “the outcome of the brand’s equity is its revenue premium, \( R_j^* - R_j^{**} \), that is, the revenue it achieves in the market less the revenue it would achieve if it had no brand name” (p.4). As a result, to approximate \( R_j^* - R_j^{**} \) the authors take the brand’s current revenue as \( R_j^* \) and the revenue of the private label in its category as \( R_j^{**} \). Subtracting the latter from the former yields the revenue premium for brand \( j \).

As with any other method, calculating BE based on price premium or revenue premium has advantages and disadvantages. The advantages are the relative ease of calculation and the reliance on actual market data. Plus, the proposed revenue premium is one of the few models that considers the impact of brand activities on
BE. The disadvantage is associated with the fact that those methods do not provide insights into the sources of brand equity (and consequently do not provide explanations), and often no equivalent generic product is available (Christodoulides, Chernatony, 2010). Also, some brands might not command a price premium, but that does not mean they do not have high equity.

### 2.1.3. Consumer-Based Brand Equity Measurement

Any approach adopted to measure brand equity has its own advantages and disadvantages. Further, as stated by Keller and Lehman (2003, pg.3), “no single measure can possess all the characteristics that marketers desire in the ideal brand equity measure”. Therefore, adopting one approach, rather than another, is mainly a matter of preference.

Considering the fact that consumers create the equity of a brand through their perceptions and behaviors, prioritizing a psychological and behavioral perspective seems to make more sense, since it includes a multidisciplinary approach, not exclusively logical, but more realistic and yet complex.

Due to the fact that brand equity is a complex concept, achieving a consensus about which consumer-based model is capable of being applied in any context and which components should be analyzed has not been an easy task.

Besides, the growing importance of the topic, both in the academic and business worlds, has led to a significant number of proposals of brand equity models, including from consulting firms.

With no claim of presenting all the brand equity models suggested to the present day, some of the most known models proposed by academics and consulting firms are presented in the following pages.

- **Academic-based measures of CBBE:**

  **Aaker’s brand equity model**

  Aaker defines brand equity “as brand assets linked to a brand’s name and symbol
that add to, or subtract from, a product or service” (1991, pg.15). According to this author, these assets can be grouped into four dimensions: brand awareness, perceived quality, brand associations, and brand loyalty. These dimensions have been commonly used and accepted by many researchers (Keller, 1993; Motameni, Shahrokhi, 1998; Yoo, Donthu, 2001; Bendixen, Bukasa, Abratt, 2003; Kim, Kim, An, 2003).

![Brand Equity Diagram](image)

Figure 1: Brand Equity by Aaker and Joachimsthaler, 2000. Source: Francisco Guzman, 2004.

Aaker (1996) describe brand awareness as the strength of a brand’s presence in the consumer’s mind, that can be measured according to different ways in which consumers remember a brand. These may include:

- Brand recognition: consumers’ ability to confirm prior exposure to a brand. That is, to correctly discriminate the brand as having been previously seen or heard.

- Brand recall: consumers’ aptitude to retrieve the brand from memory given the product category, the needs fulfilled by the category or a purchase or usage situation as a cue.

- Top of the mind notoriety: when the brand name first comes to mind when a consumer is presented with the name of a product classification.

- Dominant brand: when, in a recall task, consumers can only provide the name of a single brand.

Later, Aaker suggested that brand awareness has been shown to affect perceptions and even taste: “people like the familiar and are prepared to ascribe all sorts of good attitudes to items that are familiar to them” (Aaker and Joachimsthaler, 2000, pg.
On the other hand, perceived quality, defined as “the consumer’s judgment about a product’s overall excellence or superiority” (Aaker, Biel, 1993, pg.144), represents a special type of association since it is considered to influence brand associations and affect brand profitability. In addition, it is considered to affect brand image, directly or indirectly, through the constructs of perceived value or brand attitude. However, Aaker and Biel (1993) view perceived quality as a different construct from brand image, although it is sometimes used as a proxy for the later. Brand image is then seen as being at a higher level of abstraction than perceived quality.

As to brand associations, they are described as anything that connects the consumer to the brand, including “user imagery, product attributes, organizational associations, brand personality, and symbols” (Aaker and Joachimsthaler, 2000, pg. 17), and can be distinguished between 11 dimensions: product attributes, intangibles, customer benefits, price, use/application, user, celebrity, life style, product class, competitors, and country of origin (Aaker, 1991).

Finally, brand loyalty is for Aaker at the heart of brand’s value (1991, pg. 17). This component is explained as a measure of how much a purchaser can be emotionally involved in a brand, and how much a consumer is willing to change to another brand, when other brands are offering more than the brand being used.

The author suggests that there are three types of loyalty: passive loyal (in which consumers buy the brand out of habit), fence sitters (where consumers behave indifferently between two or more brands), and committed (representing truly loyal to the brand).

**Keller’s CBBE model**

Defined as the most comprehensive brand equity model available in the literature (Kuhn, Alpert, Pope; 2008), Keller’s pyramid model (figure 2), known as the Customer-Based Brand Equity Model (CBBE model) (1993, 2001, 2003), was defined by the author as “the differential effect that brand knowledge has on consumer response to the marketing of that brand” (pg. 60, 1993). This model provides
guidance for brand building and evaluation. Its basic premise is that the power of a brand resides in the minds of its customers and brand attitude is the most abstract and highest level of brand association (Keller 1993).

When building this model, the author’s primary focus was on consumer markets and for that reason Keller recognizes that there may be general differences between the brand equity analysis on consumer and B2B markets, as has been confirmed by Grace and O’Cass (2002).

![Customer-based brand equity pyramid](image)

**Figure 2:** Customer-based brand equity pyramid. Adapted from *Strategic Branding Management: Building, Measuring and Managing Brand Equity*, by K. L. Keller, 2003, pp. 76.

The purpose of the CBBE model is to measure the strength of a brand, considering that the latter depends on how consumers think, feel, and act toward the brand.

This model is composed of four stages, each one dependent on the successful achievement the previous one, acting as a branding ladder. These steps are composed of six brand building blocks or elements: salience, performance, imagery, judgments, feelings and resonance. As Kuhn, Alpert, and Pope (2008) mentions, “the
ultimate aim is to reach the pinnacle of the CBBE pyramid – resonance – where a completely harmonious relationship exists between customers and the brand” (pg.4).

The first step is to ensure a correct brand identity, which means that customers should be able to identify the brand and associate it with a specific product class or need. To do this, brand salience, made up of two sub-dimensions – need satisfaction and category identification, must exist. Therefore, brand salience relates to “how often or easily the brand is evoked under various situations or circumstances” (pg. 76).

Two blocks compose the second stage of the model: performance and imagery. In this step the tangible and intangible brand associations are linked, giving meaning to the concept of brand.

Brand performance represents the way the brand attempts to meet the customer’s functional needs, and, consequently, represents the intrinsic properties of a brand in terms of inherent product or service characteristics. Their attributes are the following:

- Primary characteristics and supplementary features;
- Product reliability, durability and serviceability;
- Service effectiveness, efficiency, and empathy;
- Style and design; and
- Price.

Brand imagery deals with the extrinsic properties of the product or service, including the ways through which the brand attempts to meet customer’s psychological or social needs: user profiles; purchase and usage situations; personality and values; history, heritage and experiences (Keller, 2003). By analyzing brand image, it is possible to understand how people think about a brand abstractly, rather than what they think the brand actually does, and this is a result of a consistent work over time, confirmed through consumers' experience.

The third step of the CBBE model corresponds to judgments (overall quality,
credibility, consideration and superiority) and feelings (emotional responses and reactions) that a brand produces in customers, based on a combination of associations identified in brand meaning. This approach reflects a customer focus on the functional, emotional, and self-expressive benefits of brands.

According to Keller (2003) there are six types of feelings:

1. Warmth: the brand makes consumers feel a sense of calm.
2. Fun: the brand makes consumers feel amused, playful, cheerful, etc.
3. Excitement: the brand makes consumers feel energetic and that they are experiencing something special.
5. Self-respect: the brand makes consumers feel better about themselves.
6. Social approval: the brand results in consumers having positive feelings about the reactions of others.

Brand resonance constitutes the pinnacle of the pyramid, which refers to the nature of the relationship between the customer and the brand. That is, after the first three steps (brand awareness, brand attitudes, brand judgments and feelings) the customer finally becomes attached, engaged, committed, and loyal to the brand. This stage has four sub-dimensions: behavioral loyalty, attitudinal attachment, sense of community and active engagement (Keller, 2001).

- Consultancy-based measures of CBBE:

Equity Engine℠ model

Equity Engine℠, developed by Research International, expresses brand equity as a combination of the functional benefits delivered by the perceived brand performance, and the emotional benefits (the perceived brand affinity).

In this model performance is expressed as a function of product and service attributes; and affinity as a function of brand authority (the reputation of the brand on the dimensions of heritage, trust, and innovation), identification (the closeness
customers feel to the brand, expressed by bonding, caring and nostalgia – the past relationships with the brand), and approval (the status the brand enjoys among a wider social context of family, friends, and colleagues, resulting from an evaluation in terms of prestige, acceptability and endorsement).

The Equity Engine\textsuperscript{SM} model incorporates a form of conjoint methodology that establishes the price premium that a brand’s equity will support. In this sense, this model also considers the interaction between the brand’s equity and its price (In: http://www.zibs.com/knowles.shtml).

**MarkPlus Insight model**

The MarkPlus Insight model combines the methodologies developed by David A. Aaker and Kevin Lane Keller, and suggests that the measurement of brand equity is based on three key dimensions: brand awareness, brand image, and brand loyalty (In: http://markplusinsight.com/research-topic-brand-equity-measurement.php).

Brand awareness is measured based on two indicators: performance of top of mind awareness towards a brand, and performance of other spontaneous awareness towards a brand.
The measurement of brand image is based on three key indicators: brand strength, brand favorability, and brand uniqueness. Those indicators of brand image are figured based on factor analysis towards a set of tested brand image attributes.

Finally, brand loyalty is measured based on four dimensions: satisfaction towards a brand, customer retention towards a brand, migration barrier to use a brand, and customer enthusiasm towards a brand.

The next figure shows how the three brand equity models are connected in the MarkPlus Insight model.

![Brand Equity Diagram]

Figure 4. MarkPlus Insight model. Source: http://markplusinsight.com/research-topic-brand-equity-measurement.php.

**BrandAsset® Valuator:**

The BrandAsset® Valuator, developed by Young & Rubicam, seeks to establish a pure measure of brand equity independent of category context. Therefore, 2,500 brands in its U.S. survey were rated on the same 48 attributes and four macro constructs (differentiation, relevance, esteem, and knowledge).
The constructs of differentiation and relevance are combined into a single metric of brand strength. The constructs of esteem and relevance form brand stature that is correlated to current market share but not potential for growth (In: http://young-rubicam.de/tools-wissen/tools/brandasset-valuator/?lang=en).

**Brand Strength**

**Strength/ Vitality**

- **Differentiation**
  - The brand’s unique points of difference;
  - relates to premium margins

- **Relevance**
  - How appropriate the brand is to you;
  - relates to market penetration

**Brand Stature**

**Emotional Capital**

- **Esteem**
  - How well regarded the brand is; relates to its delivery on promise

- **Knowledge**
  - A deep understanding of the brand;
  - relates to overall customer experience

| 48 images attributes |

Figure 5. Brand Asset Valuator from Young&Rubicam.

**BrandDynamics™**

Developed by Paul Dyson, Andy Fair and Nigel Hollis, the research company Millward Brown presented the BrandDynamics™ methodology expressed in the pyramid of engagement. This approach gives a graphic representation of the strength of the relationship consumers have with the brand and aims to characterize the customer-brand relationship into one of five stages: presence, relevance, performance, advantage, or bonding.

Similar to Keller’s model, the underlying premise of this model is that the lifetime value of customers’ increases the higher up they are in the pyramid. That is, on the first stage of "presence" customers have only a basic awareness of the brand, while on the last stage "bonded" customers are intensely loyal, at least in their attitudes. To progress beyond the presence stage, a brand’s promise must be of relevance to the needs and aspirations of the potential buyers, and should be able to fulfill its claims (performance). Also, the brand must demonstrate that it is more relevant
than the competition (advantage). Finally, it is the ability of the brand to create a bond with its users that ensures loyalty and forges a special relationship with the consumer (Dyson, Fair, Hollis, 1996).

According to the brand equity model developers (*idem*), “people who progress to the bonding level are likely to spend an average of 38 percent of their category expenditure on the brand” (pg. 16) – a figure expected to vary from brand to brand and category to category.

![Brand Dynamics Diagram](image)

Figure 6: BrandDynamics from Millward Brown.

### 2.1.4. The proposed model

As stated earlier, the choice of a conceptual model able to describe the process of construction of brand equity is not consensual given its behavioral nature, and is hence complex and interpretive. Therefore, this author is of the opinion that, although the literature is composed of several proposals, some of them already presented here, there is still interest for new conceptual contributions of the discussed phenomenon.

The models that are suggested seek to contribute to the academic discussion of this topic by combining in a single model some already established brand equity components in the literature from different models.

Second, contrary to the majority of studies on CBBE, the presented models aim to go beyond the individual perception of brand equity and include a holistic approach to the process. That means recognizing the importance of the influence of social
dynamics and including it in the analysis of the consumer-brand relationship.

Third, these models, specifically their chosen components, are also based on the neural psychology findings that provide useful inputs on how a brand is perceived (e.g. Quartz and Asp 2005; Yoon et al. 2006; Moutinho and Santos 2009).

Forth, special attention was given to the identification of key metrics that can explain customer behavior and their purchase decision, providing a reliable measure of the brand’s ability to generate cash flow.

Fifth, both models are simple, valid and parsimonious, capable of being applied at any context, whether it is in the consumption market (product and services) or business-to-business.

Finally, though the components are the same, both models share the same base (the first two stages) and differ in the last two, regarding whether they are applied to low or high involvement consumption processes.

![Figure 7: CBBE model for low and high involvement purchases.](image)

The four constructs that compose the suggested CBBE model and represent the outcomes of the brand strategic decisions are: brand awareness, brand image, brand loyalty, and brand relationship. The first two are perceptual in nature and the last two are consequential behavioral measures or manifest dimensions of brand equity.
These components constitute the outcomes of branding decisions that impact the equity of a brand, causing reactions to each other in a linear process and are beyond the objectively perceived value.

This study does not aim to be exhaustive, as the referral brand assets are complex phenomena with countless effects on consumer behavior. The main objective is to identify some of these effects by focusing on specific points rather than presenting a comprehensive model, which would be unrealistic in view of the complexity of the issue.

- Brand Awareness

Brand awareness represents the measure of the percentage of the target market that is aware of a brand name (Bovee et al, 1995), and for that reason plays an important role in consumer decision-making, perceived value, and consumer loyalty. In order to have strong, favorable, and unique associations, a brand should first be in the consumer’s memory (Keller, 1993) and should be recognized as a member of a certain product category. Only then do the chances of a brand being in the consideration set increase, allowing the occurrence of loyalty (consumers respond strongly and decide to buy familiar and well-established brands (Jacoby, Syzabillo, and Schach, 1977; Roselius, 1971)). Besides, brand awareness is an asset that can be durable and sustainable. Hence, it may be extremely difficult to dislodge a brand that had achieved a dominant awareness level (Aaker, 1996). Therefore, brand awareness is an indispensable asset and the base on which to place any brand in the consideration set, increasing choice advantage (Aaker, 1991; Keller, 2003), and strengthening the brand image.

There are different levels of brand awareness, from recognition to recall, or to top-of-mind (Aaker, 1991), and multiple sources that lead to brand knowledge: feelings, behaviors, experiences, attitudes, beliefs, perceptions and thoughts, which are the basic dimensions. Secondary sources of brand knowledge can be people (employees, endorsers), things (events, causes, endorsements), places (country of origin, channel) or other brands (co-brands, ingredients, company, extensions).
Not all authors see brand awareness as a brand equity component (e.g., Berry, 2000; Prasad, Dev, 2000), claiming that it is not a direct antecedent of brand equity. This view, however, is not shared by this author, since awareness can impact future brand choice and market share (Srinivasan, Park, Chang, 2005) like any other asset, and is directly related to brand-related attitudes, such as brand loyalty (Konecnik, Gartner, 2007).

- Brand Image

Brand image refers to the perceptions of a brand, based on observations and rational or emotional evaluations, within the mind of target customers. In other words, brand image is constituted by a set of brand associations and subjective evaluations automatically formed, made over time, that may or may not represent the objective reality (Aaker, 1991; Keller, 1993). Using the words of Keller (1993, pg. 3) “brand image is defined as perceptions about a brand as reflected by the brand associations held in consumer memory”. This definition, as mentioned by Korchia (1999), is consistent with many other authors’ (Newman, 1957; Dichter, 1985; Aaker, 1991; Engel, Blackwell and Miniard, 1995, etc).

Based on the work of Keller (1993) and Aaker (1991), Korchia (1999) established 15 categories of associations: the company, other organizations, brand personality, celebrities and events, typical users, typical usage situations, product category, price, communication, distribution, product-related attributes, functional benefits, experiential benefits, symbolic benefits, and attitude.

As Keller notes, associations can vary in strength, favorability, and uniqueness, and should be distinguished from the secondary associations - those that are linked to a brand association but not directly related to the product or service (1993).

Brand image is an important element for the creation of brand equity, inasmuch as it helps to process or retrieve information related to the brand, influencing buying decisions and behaviors. Moreover, brand image has a differentiation role, given that each image is unique (Aaker, 1991). When the image is positive it can become a stimulus for positive attitudes and feelings, with the possibility of leading the
consumer to commitment (along with the existence of satisfaction), or to loyalty (Janiszewski, Osselaer, 2000), while providing a basis for extensions (Jiang, Dev, Rao, 2002; Klink, Smith, 2001; McCarthy, Heath, Milberg, 2001).

From a neuroscience point of view, brand images are neurological reactions toward a tangible or intangible object; visual or conceptual stimulus. According to Erik du Plessis and Charles Foster (1991), what happens is that the eyes capture the light waves on the retina stimulating the occipital nerves, which transmit the signal to the occipital regions in the back of the head, from where these stimulated nerves stimulate other nerves. This process whereby neurons recruit other neurons is based on previous stimulation of the neuronal sets, i.e. experiences, and is understood as “interpretation”.

As the recruitment of neurons moves from the occipital region toward the frontal lobes interpretation is refined, based on experiences. Hence, whatever we see is presented (interpreted) against past experiences on the frontal lobes for conscious processing. However, the process of interpretation passes the limbic system (that contains our basic emotions and the amygdala, which is the unit that sends “readiness” responses to the body), which is situated between the occipital region in the back of our heads and the frontal lobes. The interpretation gets to the frontal lobe as a fully formed image, and the logical processing decides what the image is, instructing the body how to react. In short, unless a perception is emotionally encoded it will not be rationally useful (Damasio, 1994). This means that the emotive experiences come to the fore to set the context inside which the rational interpretation takes place.

Thus, brand images are conceptual, rational, and emotional reactions (i.e., perceptions or subjective evaluations) based on emotions and evaluations. Therefore, judgments (such as perceived quality\(^5\)) and feelings should be included in the brand image asset, and should not be considered independent, as they represent perceptions of how the brand performs and are also conceptual reactions to

\(^5\) By perceived quality it is understood the customer’s perception of overall quality or superiority of a product or service with respect to its intended purpose and as an intangible, overall feeling about the brand (Aaker, 1991; Keller, 2003a). In this sense, perceived quality can be understood as a functional benefit association.
previous experiences (direct or indirect) as well as to received information.

Moreover, based on the neuroscience findings, if we assume brand equity as consumers' overall evaluation of a brand, whether good or bad (Mitchell and Olson, 1981), then it is suggested that the concepts of brand image and brand attitude describe the same phenomenon, since brand image is already an evaluation per se, making both concepts redundant.

**Brand Loyalty**

Customer loyalty is another concept widely discussed in marketing research and many definitions have been introduced over time. Engel, Kollat, and Blackwell (1982), for instance, defined brand loyalty as “the preferential, attitudinal and behavioral response toward one or more brands in a product category expressed over a period of time by a consumer” (in Anderson, Srinivasan, 2003). Other researchers have defined loyalty as “a favorable attitude toward a brand resulting in consistent purchase of the brand over time” (Assael, 1992, pg.87).

According to these definitions, loyalty is expressed by an intention to maintain the relationship in the future reflected by continued purchases. Nonetheless, this measure of loyalty has been criticized due to the fact that customers with weak relational bonds and little loyalty may report high continuity expectations as a result of their perceptions of high switching costs or their lack of time to evaluate alternatives (Oliver, 1999).

The same author (1999) proposed a definition of loyalty as “a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts have the potential to cause switching behavior”.

Loyalty, therefore, implies a preference to a particular brand or company, although satisfactory alternatives may exist. Moreover, “for a customer to become and remain loyal, he or she must believe that an object firms’ products continue to offer the best choice alternative” (pg. 35).
Habitually, loyalty has been analyzed from two different dimensions: attitudinal and behavioral (Gremler, 1995; Hallowell, 1996; Auh et al., 2007).

Attitude formation precedes behavioral intentions and actual behavior and is defined by the feelings that lead to general attachment to the people, products, or services of an organization. Baldinger and Rubinson (1996) have validated that highly loyal buyers tend to stay loyal if their attitude toward a brand is positive. In addition, the ability to convert a switching buyer into a loyal buyer is much higher if the buyer has a favorable attitude toward the brand.

On the other hand, behavioral loyalty has been defined by the repeating buying behavior, the frequency of visits to a store, or the percentage of expense (Nilsson and Olsen, 1995).

Between the two dimensions, Mittal and Kamakura (2001) suggest another that represents the intention to act in the buying decision process, a predisposition to buy a brand for the first time, or a commitment to repurchase a current brand: behavioral intent.

That being said, obtaining consumer loyalty has been considered a crucial aspect for gaining success and sustainability over time (Keating et al, 2003). Not only will it enable higher future purchase intention, but it will also favor higher intensity in positive word-of-mouth (Hallowell, 1996), lower price sensibility (Lynch, Ariely, 2000), create more stable and bigger incomes (Knox, Denison, 2000), lower switching to competitors (Yi, La, 2004), maintain premium pricing, provide greater bargaining power with channels of distribution, reduce selling costs, and synergize advantages of brand extensions to related product/service categories (Reichfeld, 1996).

For some researchers, the relation between satisfaction and loyalty seems almost intuitive and several have attempted to confirm it (Newman and Werbel, 1973; Woodside et al., 1989; Cronin and Taylor, 1992). The results show that the strength of the relation between satisfaction and loyalty varies significantly under different conditions. For example, Jones and Sasser (1995) discovered that the mentioned strength depends upon the competitive structure of the industry. Oliver (1999) discovered that satisfaction leads to loyalty, but true loyalty can only be achieved
when other factors are present. Also, loyalty implies satisfaction, but satisfaction does not necessarily lead to loyalty (Waddell, 1995; Oliver, 1999).

We are satisfied when we have perceived that our expectations about the performance of another party were fulfilled or exceeded. Dissatisfaction occurs when those expectations are not achieved. For Grun, the defined object is “the extent to which benefits actually received meet or exceed the perceived equitable level of benefits” (1995, pg. 457). Some authors believe that simply accomplishing expected performances may not necessarily lead to satisfaction, but to a neutral feeling of indifference. As a consequence, satisfaction happens when there is an exceeding performance (Bauer et al, 2002).

Consequently, it becomes clear that the relation between quality and loyalty, supported by the customer value theory on that brand, influences quality perceptions which determine willingness to repurchase (Rao, Monroe, 1989). As Aaker (1991) stated, the customer is likely to become loyal to a brand if the brand offers, based on its high quality, a good reason to buy repeatedly and provides a unique purchase experience that is unavailable from competitors’ offers.

Although Aaker (1991) and Keller (2003) presented brand loyalty as a component of brand equity, in practice other researchers see it as a variable determined by brand awareness, brand image, and/or perceived quality (e.g., Brunner, Stocklin, and Opwis, 2008; Lai, Griffin, Babin, 2008). In this work brand loyalty is analyzed as a brand asset that composes the consumer-based brand equity model, since it is an outcome of the branding activities that can express the power of a brand in a consumer

Due to the fact that what people say they will pay and which brands they claim to be loyal to, do not usually closely match what they actually do and can be influenced by the desired image perception of the participant, the short-term results of brand equity are believed to be the best measurable results (Tim Ambler, 1997). Therefore, the focus should be on recent past consumption behaviors.
Brand relationship:

The last component of the suggested brand equity model aims to embrace a holistic point of view of brand equity construction by considering the influence of the social networks in the brand-consumer relation at an individual level.

The focus on brand relationship is not novel. Fournier (1998), for instance, is among the firsts to suggest that brands should be viewed as relationship partners. Even before, Grönroos (1994) suggested that relationship marketing would be one of a number of paradigms that would increasingly supplement the marketing mix perspective. Moreover, Berry (2000) advocated that brands should go beyond getting pure economic value to also generate emotional value such as closeness and affection. In other words, “being authentic summations of a company with a soul” (pg.134).

Summing up, in the last years different researchers have suggested a switch in the marketing perspective, going from the cognitive (rational) to the affective point of view, focusing on human feelings. However, in order to accomplish a close relationship with customers, firms’ products and services should first meet the customer’s needs and expectations. Nevertheless, even a brand with a solid and strong position in a specific market, may not be able to achieve the desired relationship equity (defined as the tendency of the customer to stick with the brand, above and beyond the customer’s objective and subjective assessments of the brand), that enables customer to be less willing to recreate a relationship with an alternative provider (Lemon et al. 2001).

Brand relationship is therefore a cluster of emotional and functional values (de Chernatony, Dall’Olmo Riley, 1999), a specific asset that measures how consumers are engaged and involved with a brand. Moreover, it allows for an understanding of the extent to which consumers are willing to recommend a brand. This relationship equity (also known as retention equity) represents the psychological or emotional meanings of a brand to the consumer.

The fact that consumers and brands can and should establish relationships that go beyond the basic commercial relation does not mean that brands are being
humanized. In fact, recent neuroscience studies have shown that different brain areas are activated when participants are exposed to individuals or brands (Yoon, Gutchess, Feinberg, Polk, 2006). Specifically, the stimuli created through the judgement of other people activate the medial prefrontal cortex regions and products’ judgments activate the left inferior prefrontal cortex (an area that involves the object processing), meaning that both stimuli are not perceived equally, thus rejecting the common brand-anthropomorphizing phenomenon.

By considering the type of relation that a consumer has with the brand and how this relation impacts social interactions (and vice-versa), we can gain a better picture of how a brand is perceived, not only in an individual level, but also in a holistic point of view.

In this study, the concept of relationship is analyzed and measured from two perspectives: from a dyad level (brand/consumer relationship), and from a triad level (brand/consumer/social network relationship), whereas the first impacts the second.

Specifically, in the first case, the focus of brand relationship is on the tendency of a consumer to actively search for extra information about a brand or the associated company associated, to engage with it, and to contribute to the brand development whenever possible. Here customer service, such as loyalty programs, special

![Diagram](image-url)
treatment, affinity programs, community-building programs, and knowledge-building programs, as well as brand communities, play an important role, since they may increment the level of engagement and the brand interest, i.e., "the level of interest or intrigue the consumer has in the brand and the level of curiosity s/he has to inquire or learn more about the brand" (Machleit, Madden, Allen, 1990, pg. 223). This type of relationship is defined as exchange, where benefits are given to others to get something back (Aggarwal, 2004).

Fournier (1998), after examining the nature of relationships that customers have or want to have with companies (see also Fournier, Yao 1997, Fournier et al., 1998), proposed six dimensions beyond loyalty or commitment along which consumer-brand relationships vary: self-concept connection; commitment or nostalgic attachment; behavioral interdependence; love/passion; intimacy; and brand-partner quality.

In the second type of relationship, the focus is on the measurement of the strength of the brand relationship and how it is extrapolated to the individual social interaction sphere. In other words, brand relationship is so strong at the first level that it is transferred from an individual and personal relation to an open and exposed relation, whereas the consumer becomes the brand ambassador and ultimately can affect other’ people’s brands perceptions, specifically affecting positively or favoring a brand in the information distribution and in the buying decisions of the social network. Knowing that the latter also has an active role in this stage of exchange of influence, the strength of the individual brand relation will determine the sustainability of the brand’s support. Here the relationship is described as communal, since benefits are given to show concern for other’s needs (Aggarwal, 2004). One possible way to measure this perspective will be defining the share of voice of a brand from a particular individual towards his social network over a defined period of time. This share of voice measurement represents the percentage of brand “advocativeness” a brand receives in relation to other brands from the same category, considering that this measurement is more likely to be affected by personal characteristics, than from loyalty levels, or buying behavior.
Nevertheless, the fact that this analysis is done at an individual level jeopardizes the feasibility of the task due to the expected high costs.

By studying the willingness of consumers to recommend, brands should consider the complexity of human behavior, which means a deeper understanding of customer behavior. Doing so, academics and marketers will be able to distinguish different types of behavioral patterns in relation to the information (such as differentiating lurkers from mavens), leading to more accurate and efficient actions, which in turn will help to create brand value and ultimately higher company value.

Furthermore, by considering brand relationship on brand equity measurement, managers are interpreting marketing accountability in the long-term, reinforcing the strategic discipline that marketing is, and not only the tactical. This means that the focus is shifted to the long-term value of a brand through customers.

Some questions may arise concerning the focus on brand relationships such as, does the brand relationship have the same value in both business to consumer environments as in business-to-business, or even among products with high and low perceived risks? Future research is expected to find an answer to this and other questions.

2.2. Social Network Sites

“Instant information creates involvement in depth”

— Marshal McLuhan

2.2.1. Social network sites - definition, description, and characterization:

While the term “social network” refers to the concept of a network comprised of interconnected nodes, the expressions “social networking site”, “social network site” or even “social network service” refer to the online software that came along with the popular Web 2.0, allowing individuals to interact with their social network in an online environment. The first term - “social network” - is naturally the predecessor of the others (social networks have always existed, along with human civilization).
However, nowadays the term is often used to express the second phenomenon – the “social network site”. In this chapter, the term “social network site” (SNS) will be used to express the previously described web-based services for the same reasons stated by Boyd and Ellison (2007): “Networking” emphasizes relationship initiation, often between strangers. While networking is possible on these sites, it is not the primary practice on many of them, nor is it what differentiates them from other forms of computer-mediated communication (CMC)” (pg. 211).

SNS are part of what informatics call “peer-to-peer” (P2P) systems, and therefore some key characteristics can be identified. Wang and Sun (2008) summarizes five such characteristics:

Decentralization: P2P systems are ‘open’ distributed systems, not owned or controlled by anyone or any company, where the users are both receivers and producers of resources at the same time.

Dynamics: The dynamics are omnipresent, enabling users to join in or leave a P2P system at any time, even with different IP addresses.

Flexibility: The network structures are independent from the underlying organizational infrastructure, the Internet.

Autonomy: Peers have significant autonomy on what to provide and what to read. They can also actively choose communication channels and modify their (logic) connections to others. This way they can improve and customize their resource sharing.

Cooperation: A P2P system is a cooperative network. It will not work without peer collaboration. The efficiency and effectiveness of a running P2P system, however, depend on how well those properties are exploited.

Currently, many definitions for SNS can be found. According to Boyd and Ellison (2007), they are “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and
nomenclature of these connections may vary from site to site." In the opinion of Lenhart and Madden (2007), SNS provide an effective and powerful channel for individuals to create a visible personal profile, build a personal network, and develop and maintain social relationships. Stenger and Coutant (2009) expanded Boyd and Ellison’s definition, stating that SNS are not focused on any particular activity, thus distinguishing SNS from online communities.

Based on Boyd’s and Ellison’s article, intended for submission in the Journal of Computer-Mediated Communication⁷, Stroud (2008) identifies a checklist of the building blocks that constitute social network functionality:

1) Profiles described as pages that enable individuals to describe themselves through rich content. The profiles can be private (only available to approved people), public (available to anybody) or a combination of the two.

2) Contact networks: Users can identify others, who are also registered on the site, with whom they can and want to communicate.

3) Messaging: For the registered members, it may even serve as a substitute for email.

4) Content sharing.

5) Add-value content: Social network sites partner with content and widget providers to enrich users’ profiles.

The presented definitions focus on the role of SNS as social communication platforms between members of a common social network, and neglect the increasing use of organizations to communicate and engage with their target audiences. Therefore, a more complete definition of SNS is suggested: web-based services with three main functions: personal, social and, in some cases, “infomercial”.

The personal function is justified by the fact that SNS are web-based services in regard to profiles, a form of individual (or, infrequent, group) home page, which

⁷ A work-in-progress introduction to the JCMC special issue on Social Network Sites by Danah Boyd and Nicole Ellison, http://jcmc.indiana.edu/vo113/issue1/boyd.ellison.html
offers a description of each member. These networks serve as self-expression areas, allowing users to produce, publish, and share content on their personal pages; thus the private becomes public.

Second, SNS have a social function, acting as spaces where members interact and exchange content (text, images, files, and video) with other members of their personal network, helping them to create or support a desired self-image. Moreover, these sites also allow users to enlarge their social network with new weak ties and offer an opportunity for them to strengthen existing ties (whether weak or strong). As the very name indicates, the purpose of these digital platforms is to bridge the social network gap, i.e., the set of relational ties between actors in the virtual world.

Finally, due to the increasing interest and participation of private and public organizations in SNS, they can also be described as a new type of “infomercial” medium, where brands share information with users (whether they are consumers/clients or not) who have previously accepted them into their social network, enabling direct contact. The word “infomercial” - a combination of the words “information” and “commercial”- is not new and was originally applied in television advertising, referring to any presentation attempting to promote a point of view. The use of SNS by brands aims to promote their brand equity – the question of whether it is used correctly or if it works remains unanswered. Additionally, in some SNS the commercial characteristic is rather evident, allowing for the posting of paid advertisements.

Social network sites are networks fed by content produced by their users and accordingly they depend of them. Therefore, until users use SNS frequently, brands interest for these sites is guaranteed. Once users reduce their interest, expressed by the number of hours they spend on them, then companies will also reduce their interest will be for these websites. Moreover, the use of SNS by users determines the function of these sites. For example, if the majority of users use a particular online social network to seek new relationships, at some point this site will be categorized with this function. The same occurs in relation to the average age of users. In short, the present use of a SNS determine the future of that website, not excluding the impact of current and future competition. For instance, Myspace
which was originally a personal profile site, turned largely into a music site (as it remains today). However, in other situations, the original mission of a website can determine its current use. E-Harmony was conceived and designed as a dating/relationship site, not a neutral SNS that became a relationship site.

2.2.2. The boundaries between SNS and online communities

Online consumption-based communities represent networks of people whose online interactions are based upon shared enthusiasm for, and knowledge of, a specific consumption activity or related group of activities (Kozinets, 1999). In other words, community members don’t need to belong to the same social network or to have linked ties between them. They are connected due to their need to share or to acquire information about a specific product/service, such as purchase advice, to affiliate with other like-minded individuals, or to participate in complaint or compliment interactions (Cothrel, 2000; Kozinets, 1999; Hoffman and Novak, 1996). For instance, the “Adult Fans of Lego” (AFOL) brand community. Online communities are fluid and flexible virtual opinion platforms where participants (potential, current, or former customers) publish, read and assess the quality and trustworthiness of individual contributions, and their ratings are visible to other readers (Hennig-Thurau, Walsh, 2004). In addition, they have been adopted by internet users, as, according to CyberAtlas study from 2001, 84% of Internet users have already contacted at least one online community.

Figallo (1998) suggests that virtual communities are those where members meet regularly and feel part of a larger social group, where they sense an interwoven web of relationships with other members, with whom they have ongoing exchanges of commonly valued things (such as information about a common hobby), and have lasting relationships.

Even though previous research suggests that these communities provide information and social support in both specialized and broadly based relationships, becoming an important supplement to social and consumption behavior (Wellman, Salaff, Dimitrova, and Garton, 1996), as there is sufficient human feeling to develop what
are considered “social relationships” with other online participants (Rheingold, 1993), they are far from the same level of intimacy present is SNS, where people gather mainly to share and learn personal information. Moreover, and though exceptions exist, in a social network, people are held together by pre-established interpersonal relationships, such as kinship, friendship, classmates, colleagues, business partners, etc, which does not happen in online communities.

It is hypothesized that when dealing with a consumption doubt, for instance, consumers first reaction is to ask the members of their personal network (for credibility reasons or for accessibility), and when not satisfied with the obtained information they are expected to visit online communities for professional or experience-based knowledge. For this reason, it is suggested that SNS represent a more important online space from a brand perspective.

On the other hand, a brand’s page on SNS, such as Facebook, can be seen as communities where the brand is implicitly involved, since they represent online spaces of exchange of information with other consumers, besides the brand. These online communities inserted in SNS can reflect the influence of a brand, which has the responsibility to act with a conscience and to maintain its resonance, so that consumers don’t become sidelined. (Wilson and Morgan, 2011).

2.2.3. Brands reaction to SNS

From a commercial standpoint, SNS are attractive to marketers and communication managers for their high concentration of users. One study by Pew Research (2011) has found that almost 79% of American adults use the web and Anderson Analytics estimated that 110 million Americans had used an online social network within the past month (Bulik, 2009).

These websites are also ideal to establish long term relationships with current and potential customers, to gain competitive advantage, to increase notoriety, and even to create/increase brand loyalty levels (Chu, 2009).

Marketers and communication managers can also take advantage of the fact that consumers are at the center of discussions and talk about their consumption habits
on SNS using "word of mouth" (WOM) and buzz marketing solutions to disseminate their messages in a strategic and effective way, benefiting from users’ levels of credibility among members of their personal network. In fact, since the impact of WOM on sales was confirmed, by influencing consumers’ opinions and by providing a new venue for companies to reach consumers with lower costs, it has been proposed by some researchers that businesses should embrace and facilitate WOM activities (Rosen, 2000; Godes and Mayzlin 2004, Liu, 2006; Duan, Gu and Whinston, 2008), confirming the viral potential or social effect SNS can have on benefit companies (Iyengar, Han, and Gupta, 2009).

It is also suggested that SNS can provide an excellent opportunity to leverage brand equity, specifically by the level of engagement, due to their online interactivity characteristic and the fact that personalized communication (possible on this type of website) generates the most positive outcomes, while mass-marketing and “push” messages generate the least (Jameson, 2010).

Finally, SNS are online places that can be used to learn more about their target and to further enrich SWOT analysis, since it provides valuable inputs regarding the external environment, while allowing brands to assess their strengths and weaknesses.

SNS have also disadvantages that should be considered in any marketing communication plan. Schrage (2000), for instance, stresses the difference between traditional markets and high-tech markets: high-tech markets are highly dynamic markets where brand attitude can be quickly built and destroyed with long lasting effect on future performance.

SNS have only been embraced by enterprises within the last few years and for that reason the effectiveness perception of this type of website from the business point of view is still little studied in the academic literature, thus causing the need to directly contact companies to gather information. For this reason, this chapter combines the information collected in books and scientific journals on the subject of SNS with information obtained from companies, particularly from agents directly involved in the management of SNS.
To gather data, 90 of the largest Portuguese companies were contacted whose area of activity oscillates between the area of services and products, listed on the 2010 edition of the 1000 largest Portuguese companies from the Portuguese magazine “Revista Exame” and the Portuguese journal “Expresso”. An online survey was sent to the heads of marketing and communication departments of the selected companies. Since the disclosure of the requested information could compromise the success of their strategic plans and consequently their interest to participate, anonymity was guaranteed through the absence of any identifier that could correspond the answers with the entity represented by the participant. The response rate of this survey was 11% and 92% of the respondents claimed using SNS.

In the questionnaire distributed to the Portuguese companies, they were asked, by way of an open question, which are the main disadvantages when using SNS? 23.5% of the answers refered to the existence of negative comments from consumers. Followed by the lack of control of the content posted by consumers, the need for an immediate response, and the need for relevant content (17.6%). 11.7% stressed the company’s exposure and the need for a policy of transparency as two other disadvantages. Participants also identified as limitations the lack of preparation to deal with the customer in this new environment and the need for constant monitoring (6%). Other cited concerns regarding the use of SNS were: the ability to distinguish from the competition on the SNS; the creation of a conversation (one-to-one communication) between the brand and the target, capable of adding value to the brand; the need for relevant and efficient messages; the constant need for actualization and the capability to predict mass reactions to the messages; the facility to create and destroy a brand in these online spaces; the establishment of a close relation between the brand and the target; the amplification of the WOM phenomenon; and the need for resources to be and to follow the evolution of the medium.

Despite all the difficulties, 92% believed that SNS are not hype, but will remain in the future. As one of the respondents commented: “[b]eing on social network sites will be in the short term, as essential as being present in the press or on the radio”. 
These answers reflect a shift in the communication process between organizations and users. A change observed and recognized by 75% of the communication managers that answered the survey.

Traditionally, the organization produced the message and the target received it; the organization informed and the target was informed. With the advance of the Web 2.0 and the technological transformation that it represents, the user have the chance to also act as an active player, i.e., there is a transition from the production era to the collaboration era. Consequently, the information disseminated in the digital space ceases to have only one source, controller, and selective, to have multiple, with or without anonymity. The society of information gives way to the society of knowledge, and the era of production to the era of collaboration. The communication paradigm “one-to-one” and “many-to-many” are added to the classic pattern “one-to-many”.

As a result, in the complex webs of the network of networks, users realized that their "voice" can easily be transmitted free of charge, and, most importantly, be heard by many without geographical barriers. This loss of control over the information disseminated by companies in relation to their brands and themselves brings a new consciousness to Internet users. This is a consciousness that is selective, critical, and informed, while demanding both to be heard and for greater transparency on the part of organizations.

Given the combination of these two factors (loss of control of information disseminated and the empowerment of consumers/clients), the application of a relational and interactive strategy between organizations and their customers with the support of new technologies of information and communication becomes indispensable.

On SNS, for instance, consumers will be open to interact with brands as long as they are given the freedom to express themselves and the power to control the relationship and influence the brand. If a brand is not interested in evolving in response to consumer feedback it is not recommended to engage on these websites (Jameson, 2010). As was noted by 92% of the survey participants, SNS have empowered consumers.
On the other hand, 67% of the respondents also believe that SNS have also empowered brands, and 59% see SNS as a source of information about their target, a way to establish a closer relation with it (59%), and as providing an opportunity to conduct direct one-to-one communication with their target (58%).

When questioned why they decided to use SNS, participants replied that it is a reality with an important role in a well-conceived communication plan, specifically to spread a message. Others mentioned the fact that SNS are a trend with low costs. In addition, SNS allows brand’s exposition in an online place frequented by many users, favoring brand notoriety. As noted previously, participants also stress the fact that SNS favors the establishment of a relationship with their target (especially the younger cohort), helps them engage with it, and are a source of information and feedback⁶. Finally, participants reported that they use SNS because they are interested in testing the return generated by these new platforms compared to traditional media.

- **SNS as online advertising spaces**

Being aware of the advertising potential of these sites, SNS managers invested in the development of various advertising formats, facilitating the role of marketers in more effectively reaching their target audiences and implementing advertising campaigns. This decision has enjoyed a predictable positive reaction regarding communication professionals considering the shift of part of the advertising budgets to these new media. Nevertheless, doubts concerning the effectiveness of paid participation of brands in these types of websites still remain.

Through online advertising, “advertisers communicate, interact with, and persuade online users in order to position a brand, which allows a company to promote both consumer awareness and preference in a customized and personalized way, and decrease the time needed to make a buying decision” (Hanafizadeh and Behboudi, 2012, pg. 22).

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⁶ It is assumed that the feedback regards to any communication campaign.
Nevertheless, it is worth noting that online advertising has not replaced traditional advertising, as both methods are complementary. Online advertising has compelled the traditional advertising concept to adapt to the challenges of the new technology and redefine the length of its scope and methods, as has happened over the years whenever a technological advancement impacted the advertising world. In other words, the Internet has changed the way both consumers and advertisers perceive and experience advertising, in the sense that it has created a unique opportunity for customized and personalized interaction between both parties. This was a timely change, which occurred during a period when advertising had long been criticized by society for being misleading, bad, intrusive, and annoying ("Consumers Love to Hate Advertising," from Forrester Research, 2006).

Furthermore, the Nielsen Report on Global Trust in Advertising and Brand Messages from April 2012 shows that all forms of paid advertising (TV, print, digital or radio) showed a gap in the “trust factor,” with a majority of respondents reporting that they don’t trust advertising much or at all (regardless of the type). Without the element of trust, any advertising campaign’s effectiveness is jeopardized. On the other hand, “recommendations from people I know” scored highest on trust, with 92 percent of consumers trusting this source completely or somewhat. Owned media, such as brand websites, scored higher than paid advertising, but lower than social recommendations.

Therefore, these findings stress how advertising, as we know it, should be re-conceptualized and adapted to the new times, which does not necessarily mean that traditionally paid advertising will cease to exist. The key question should be as follows: How can advertisers recover the element of trust, in order to achieve effectiveness? Recommendation or earned advertising may be the answer.

By adding a social component to their ads, advertisers could transfer the feelings of trust from a friend to the promoted message, thus legitimizing the ad, which could also benefit from the exerted social pressure accrued from the influence applied by a peer group, thus encouraging individuals to change their attitudes, values, and/or behaviors in order to conform to group norms.
Currently, Facebook is exploring this social influence component through the so-called social ads. These are targeted based on underlying social networks and their content is tailored with information that pertains to the social relationship. Tucker (2012) found that this social advertising is effective, but can, however, be less effective if the advertiser explicitly states it is trying to promote social influence in the text of their ad.

At the same time, the more information users provide about their personal background on SNS, the more targeting opportunities companies get, increasing the importance of advertisement as a source of revenue for SNS, for these ads can also be based on demographic and psychographic data taken from member profiles.

On the other hand, earned advertising has a tendency to “go viral” on the Internet (or in an offline context) and generate word of mouth, thus reaching thousands of potential consumers at no additional cost, by virtue of the brand or company’s presence, product, or services. Hence, the earned advertisement process requires an extra effort to create awareness and, above all, to engage the audience. For this to happen, getting people’s attention is not enough. Advertisers will have to more actively engage, listen, and understand their target. Moreover, they will have to realize that relationships are not static, but are constantly changing; advertisers need to keep working on these relationships. In this way, well-executed and well-coordinated paid advertising can become social and consequently earned, whenever customers become the communication channel of a message.

Consequently, the old AIDA principle (Attention, Interest, Desire, Action) (Lewis, 1993) has become insufficient nowadays, especially in online advertising. To be effective, advertising should not only capture people’s attention (which implies interest), but also remain in their memory (be it short or long-term memory). In addition, advertising must also be able to change attitudes, based on trust. Finally, advertising should lead to action, not only in relation to buying behavior, but also as regards social engagement in a scalable way.

Many definitions of advertising have been put forward over the last decades – yet, none of these definitions has found a consensus among academics and/or practitioners. For instance, according to Bovee (1992), “advertising is the non-
personal communication of information usually paid for and usually persuasive in nature about products, services or ideas by identified sponsors through the various media” (pg. 7) - However, Richard and Curran (2002), with the support of 14 advertising experts, defined advertising as a “paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action, now or in the future” (pg. 74).

Considering the evolution of the brand-consumer relationship, and the above-mentioned consequences, a new conceptualization of advertising is needed - as a persuasive form of communication, personal or non-personal, not necessarily spread by the advertiser, though identifiable, and having or not having an ad format. This means that the traditional one-to-many advertising pattern gives way to the many-to-many pattern, as well as the one-to-one communication direction.

- Attention Issues on the Internet

For an ad to work, the consumer must notice it, react to it, and even visit the website associated with the ad. In other words, when an ad is embedded within a medium, whether online or offline, it is expected to be able to monetize the associated costs by attracting people’s attention.

The concept of attention is perceived as a limited variable as regards its use, since attention can be selective, voluntary or involuntary and, in some cases, unpredictable. Nevertheless, recent studies have succeeded in establishing relations between the attention variable and other variables. For instance, it is known that the amount of attention paid to the contents of a web page varies from page to page (Wang and Day, 2007), that this amount is directly related to the performance of mental activities (Kahneman, 1973), and that information-seeking behavior changes according to the user’s gender (Lorigo, Pan, Hembrooke, Joachims, Granka and Gay, 2006).

Based on the selective attention and Elaboration Likelihood Model (ELM) theories, Hsieh and Chen (2011) suggested that viewing content with different information types requires different mental resources and cognitive abilities. In other words,
browsing of the main content should have an influence on whether the user pays more or less attention to that web page’s advertisement. News and forum-oriented websites have mostly text-based content, which constitutes a much heavier mental workload, therefore demanding more human mental resources. This diverts attention to text-reading tasks, to the direct detriment of other distracters on a web page. In contrast, photo and video-sharing websites are evidently more image-oriented, which require less mental resources. Hence the viewer’s attention on banner advertising will be stronger.

A correlation was also found between the positive evaluation of an ad and the increased attention the ad receives (Maughan, Gutnikov and Stevens, 2007), i.e. the higher the interest in an advertisement, the greater the attention the ad receives from the user. This attention is manifested by an increased number of fixations⁹, as well as fixations of increased duration. In this sense, and according to the findings of Pagendarm and Schaumburg (2001), low click-through rates are simply due to a lack of interest in what is being advertised.

The way the site is visualized also influences the attention given to constituent elements of the medium (in this case, the website). According to the “scanpath” theory (Noton and Stark, 1971ab), people memorize and repeat the route taken during the first reading. This “scanpath” is difficult to control because it varies from person to person.

According to Lorigo et al. (2006), there are differences between men’s and women’s “scanpaths”. The findings show that the former tend to be more linear in regard to how they see the results; moreover, men also look at more results than women.

Furthermore, it is also well known that there is a tendency to view web pages in an F-shaped format, i.e., two horizontal stripes followed by a vertical stripe, from top to bottom. This important conclusion was obtained by a usability study conducted by the Nielsen Norman Group, in 2006, which involved 232 participants.

⁹ Fixations describe the moment when the eyes are relatively fixed, assimilating or “decoding” the information, lasting an average of 218 milliseconds with a range of 66-416 milliseconds.
- Banner Blindness Theory

In early 1994, the world saw a proliferation of banners - digital advertising formats the size of a box, ranging from a small box (88x31 px), to a large box (300x600 px). These banners, in some cases abusive and aggressive, were developed to spark the attention of Internet users and route them, via a click, to the website of the advertised organization. As a result, the user gained knowledge about a product or service, and more visits were generated in the organization’s website.

Later, following discussions about the effectiveness of banner ads, and taking into consideration users’ reactions to them, Benway and Lane (1998) suggested that Internet users defend themselves from this kind of unsolicited advertising through a kind of self-induced blindness, referred to as “banner blindness” (Barreto, 2013).

According to their website’s usability study findings, the most obvious, colorful and animated banner adverts, previously considered more likely to be viewed on a webpage, are the ones that are ignored. This phenomenon seems to contradict the long-believed theory that in order to make something visually salient, it should stand out and be prominent.

The concept of “banner blindness”, though influenced by the banner phenomenon, is not restricted to advertising banners. In the general discussion of Benway’s paper (1998), the author states that the scope of the phenomenon of ignoring salient items while searching for a specific item may go beyond advertising.

Over the years, other authors expressing varied perspectives (e.g. Bachofer, 1998; Bayles, 2000; Hervet, Guérard, Tremblay and Chtourou, 2011) have suggested that the “banner blindness” theory does not occur in the real world, since these formats are actually seen by users when browsing websites.

In order to test whether banner blindness actually occurs, several empirical experiments, using different methodologies, were conducted all over the world. Let us consider, for example, the following investigations.

In their usability studies, Benway and Lane (1998) asked participants to find information on a specific web page. In the first experiment, the answer could be found by selecting a banner, while in the second experiment the answer was inside a
box that was shaped like a banner. The results showed that participants had difficulty finding the answer (because they were avoiding the information contained in banners) and that, in some cases, “banner blindness” occurred. Therefore, the study supported the idea that “banner blindness” can also occur with text items that do not look like advertisements.

In 2003, Xavier Drèze and François-Xavier Hussiherr conducted a large-scale survey of Internet users’ recall, recognition, and awareness of banner advertising. The results showed that users (n=49) watched less than 50% of the ads displayed. Drèze and Hussiherr advocated that the participants not only did not see the ads, but actually avoided them. The possible explanations suggested are based on the expected location of the ad, and on the fact that peripheral vision allows for recognition of objects located outside the area of attention. In other words, this capability, coupled with the fact that the traditional dimensions of a web ad are known, allows users to recognize an advertisement, even if they don’t see it directly and, therefore, avoid it if that is the intention.

Burke et al. (2005) have also shown in their eye-tracking experiments that people rarely look directly at banners and reveal low recall for banner content: “Participants in the present studies had an overriding incentive not to look at banners, and no amount of banner manipulation increased their pull. Longer exposure time, animation, and the presence of images did not make the task-irrelevant ads more conspicuous. Connecting advertising to viewers’ goals may make ads more successful” (pg. 443). On the other hand, there are studies that contradict these results and their explanations. For instance, Bachofer (1998) found high recognition rates of the presence of banners in his experiment using an eye-tracking device and asking participants (n=71) to navigate several pages of a German online magazine that contained banner ads. Bayles (2000) also found high levels of recognition and remembrance of banners in his experiments: 74% of the 35 participants recognized the two banners present in the experiment.

Likewise, the results obtained by the market research firm COBUS in their online survey conducted among 1,178 German users, reveal that the most appealing banners attract users’ attention (Leest, 1996; Belz, 1997). According to this study,
only 25% of participants indicated that banners were annoying, and only one-third of the interviewees were able to ignore them.

In 2005, the distributor of eye-tracking technology in Spain, Alt64 Digital, and the Asociación para la Investigación de Medios de Comunicación examined how users perceive Spanish news sites and concluded that more than half of the participants (n=17) saw the exposed ads.

In a more recent study, conducted by Hervet, Guérard, Tremblay and Chtourou (2011), 82% of the participants fixated on at least one of the four banners while visiting the web pages. However, when the first banner was presented and participants were not warned that banners would be encountered, fixation duration on the first banner increased, compared to when the banner had been preceded by another banner.

Another study showed that people not only see the ads, but are also influenced by the ads’ content (Briggs and Hollis, 1997). Furthermore, studies indicate that people notice ads, but dislike them; thus, site credibility suffers (Fogg et al. 2001).

Furthermore, Hervert, Guérard Tremblay and Chtourou (2010) found in their banner blindness study that 82% of participants fixated on at least one of the four banners during the web page visit, and that participants could more efficiently identify brand names when they were congruent with editorial content.

According to Magnus Pagendarm and Heike Schaumburg (2006), this diversity of results is due to the fact that there are different types of navigation behavior that lead to different visual behavior: “aimless browsing”, “associative browsing” (Tergan, 1995) or “undirected browsing” (Kuhlen, 1991) versus “goal directed searching” or “search browsing” (Cove and Walsh, 1988). In the case of a direct search for information, the user's attention is directed to the content expected to contain relevant information relating to the specific search. The underlying process has a top-down direction and is guided by cognitive schemata that play an important role in the direction of visual attention, since these schemata structure the information processing and help the user anticipate what information needs to be voluntarily
selected (Neisser, 1979). In contrast, according to Prinz (1992), in regard to associative browsing tasks, users are guided by the appearance of web page features and the attention follows a bottom-up method. In other words, initially, a stimulus attracts the attention of the user unwittingly, after which, voluntary attention is directed to that stimulus. Hence, and as an example, the results obtained by Bachofer (1998) and Benway (1998) cannot be compared, as the employed methodologies are not the same.

In this work, the hypothesis is that the banner blindness phenomenon does, in fact, exist (whether it happens with all displayed ads or just a few). Banner blindness can be described as a defense mechanism, based on the user’s peripheral vision and past experience. This phenomenon is expressed in the form of user avoidance, and based on the preconception that the information is not interesting or relevant, regardless of whether or not it is in the format of an ad or if it looks like commercial information. A factor that supports this theory is the recognized phenomenon of visual-spatial attention, by which attention to particular aspects of the environment may lead to improved processing of the attended stimuli. This improved processing, however, comes at the expense of the processing of other information presented simultaneously (Hermann von Helmholtz, 1896). Another factor is the so-called “cocktail party effect”, described as the ability to focus one's listening attention on a single speaker, among a cacophony of conversations and background noises (Handel, 1989). Both of these examples reflect selective attention mechanisms used in cognitive psychology studies.

In this sense, if we consider banner blindness as the result of a physiological and psychological defense mechanism, then it is expected not to be restricted to a particular medium (in this case, the Internet), thus occurring in other forms of communication or advertising channels, such as printed word or TV. Hence, it would be more accurate to speak of “advertising blindness”, rather than “banner blindness”.

Some researchers state that the location of banner advertisements on a web page may be a critical factor in the occurrence of banner blindness (Albert, 2002; Benway, 1998; Burke et al., 2005; Granka, Hembrooke, and Gay, 2006; Mosconi, Porta and
Ravarelli, 2008). Although these observations are valid for first-time users browsing a particular web page, memory - whether consciously or unconsciously - would also play a major role on subsequent visits in avoiding these ad areas defined as irrelevant (Hervey, Guérard Tremblay and Chtourou, 2011). Indeed, Lapa (2007) suggests that Internet users rapidly apprehend the structure of a web page, allowing for discrimination between useful information and avoidable information, such as unwanted ad banners.

Therefore, it seems reasonable to assume that advertising effectiveness is not only dependent on ad location but, above all, on the type of approach used, since past research has shown that even when a banner is noticed, recognition levels can be unsatisfactory. For example, Fox, Smith and Chaparro (2009) found with the support of eye-tracking technology that ads located above the page content received significantly more fixations, but not increased recognition.

This does not necessarily mean that people do not like ads, or that banner ads are no longer effective, in general. It means that lower ad effectiveness may simply be the result of employing obsolete ad strategies, and that there isn’t one single design format that can solve or prevent the occurrence of banner blindness, since each website should be considered as an unique case.

In conclusion, significant arguments exist to support the notion that users avoid unwanted Internet ads10 and that banner blindness occurs as a result (Benway and Lane, 1998; Drèze and Husherr, 2003; Burke et al., 2005). However, the mechanism behind this phenomenon is still not completely understood, though it is clearly not inherently passive, as it involves a learning process related to how to avoid ads, especially when these ads are not customized to the target user. Hence, Internet ad effectiveness is not merely a simple function of “cosmetic” properties, but rather the result of a unique dichotomy between the user and the ad. In other words, each

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10 Some users even use websites that block ads, such as “Adblock Plus”, which constitute one more way that banners become literally blind, as they never appear in the first place. http://www.getadzap.com/blog/how-many-people-use-ad-blockers/
website is graphically composed in a unique way: all of the site’s components such as videos, sound, images, size, and fonts serve to influence its effectiveness.

Considering the diverse results surrounding banner effectiveness, it becomes quite clear that further research is needed concerning banner blindness. Because the insertion of banner ads does not occur only in web search engine pages or corporate pages, alternative contexts representative of current Internet users’ habits should also be considered, such as online social network sites.

- Brand-centric friendships on SNS

According to Blieszner and Adams (1992) friendships are the second most important relationship in providing support mechanism to individuals (the first one is romantic relationship), such as stability and security, concerning relationships and behavior over the long term (Branje et al, 2007; Ledbetter et al, 2007). In addition, a positive relation between the number of friends and wellbeing was found (Burt, 1987; Lee and Ishii-Kuntz, 1987; Requena, 1995; Myers, 2000), which might explain the incentive from consumers to engage with others. For Demir and Weitekamp (2007) companionship and self-validation are the most significant factors on friendship to achieve happiness, while Gladow and Ray (1986) advocate “emotional support”, and Lyubomirsky et al (2006) suggest “closeness”. However, Parks and Floyd (1996) stress that there is an inadequate terminology across this research area, since terms such as “intimacy” and “closeness” are interpreted differently by same-sex and opposite-sex sets of respondents. Regardless if males and females react to negative and positive exchanges in differing ways (Pagel et al, 1987), it is known that both hold friendships as high indicators and factors concerning emotional contentment (Antonucci et al, 2001).

Based on these findings, it is suggested that brands interested in life-long relations with their consumers can take advantage of this need for support by applying community-centric brand strategies or other strategies to improve competitive performance and loyalty (Wilson and Morgan, 2011)

In this sense, Steve Ballou (2006) argues that “the old [customer relationship
management] agenda as a bandage should now be replaced with the new agenda of
customer intimacy, that is, to make customers feel good whenever they make
contact with your company. Every interaction isn’t a moment to be avoided or cut
short, but an opportunity for further intimacy with the customer” (Steve Ballou, IBM
Institute for Business Value, IBM Global Services 2006, pg. 741, cited in Wilson and
Morgan, 2011).

Such engagement “may be used as a proxy measure of the strength of a company’s
customer relationships based on the extent to which customers have formed both
emotional and rational bonds with a brand” (McEwen, 2004, pg. 487).

Keller’s CBBE model (2001, 2003) describes this relation as a state of “resonance”,
the highest level in which a brand can interact with consumers, who “will
recommend it to others, feel emotionally inclined toward it, and perceive
themselves as part of it” (Ouwersloot and Schroder, 2008, pg. 571).

For Fournier there can be fifteen types of consumer-brand relationships, described
along several dimensions including love, commitment, intimacy, passion, and
feelings of attachment, which lie at the “core of all strong brand relationships”
(Fournier, 1998, pg. 363). For Park et. all. (2009), attachment constructs may serve as
a useful higher order construct that discriminates among the relationships identified
by Fournier, the degree of love involved in brand relationships, and the norms that
characterize those relationships (Aggarwall, 2009).

In order to engage in relations with consumers, brands are expected to create similar
humanistic personalities, identities, friendships and communities (Sirgy, 1982; Belk,
1988; Aaker, 1996, 1997; Muniz and O’Guinn, 2001; McAlexander et al, 2002) that
will help personalize relationships.

However, as claimed by Wilson and Morgan (2011), “if brands are to be considered
like people, by people, they should enjoy friendships with people and to assume that
brands can reproduce identical friendships, to the ones enjoyed by consumers, at
the same physical and emotional level may be a step too far” (pg. 4). At the same
time, Wilson and Morgan suggest that it is possible for friendship between brands
and consumers to occur, which attempt to fulfill some social promises, since
consumers already project emotions onto brands. Consequently, “greater degrees of loyalty and intimacy exist when equilibrium is reached, where consumers and brands all share the same conscience” (pg. 4). Furthermore, the brand can also achieve resonance and possibly long-term protection. As a result, this desired relationship between brands and consumers depends on if brands’ and companie’s actions tend more towards emotions and relationships on an individual level, and less on functional transactions marketing approaches. Using the words of Wilson and Morgan (2011) “brands can and perhaps should engage with consumers according to a process whose first purpose is to ensure the positive facets of friendships experienced by consumers within their brand community” (pg. 12-13).

On the other hand, when engaging in relationships, brands should be aware that there are discrepancies within friendship and happiness correlations, which means that conflict can result in negative associations between parties (Demir et al, 2007). When valued relationships create a negative burden and discomfort to consumers the latter may experience an emotional loss and relationships may actually hinder and even decrease the brand’s attributes and customer-based brand equity (Wilson and Morgan, 2011).

In addition, not all consumers perceive friendship the same way and have the same commitment to the bonds between them and brands. Brands should then understand that as relationships intensify, so in turn will emotions and feelings (Wilson and Morgan, 2011). Brands should also bear in mind that trust, loyalty, and value (the base components of friendship) are built on both explicit and implicit emotional factors. Therefore, consumers will demand a greater demonstration of these elements if they are to participate in a “friendship” relation with a brand, and they are expected to feel “betrayed” if brands reactions during the relationship do not match with the image it previously presented. Hence, this is the moment when brands are called to prove their identity not by words as they are used to, but with actions.

To address the problem of the risk of a perceived lack of trust and authenticity, Wilson and Morgan (2011) suggest that brand managers should aspire to a conscience component which should be meaningful, credible, and demonstrable and
consequently act as an offensive and defensive strategy.

Besides functional and social roles, friendships also provide support and emotional reinforcement, which is not currently being offered, and, as stated by Wilson and Morgan (2011) perhaps is not desired, by brands or their advocates. On the other hand, even consumers might not be interested in speaking to brands directly about their personal issues and motivation.

For that reason, brands have a difficult task ahead, as they should increase their consideration of the role that the brand plays in maintaining friendship, rather than consumption-based loyalty, even if it means to “measure the significance of friendship variables, inherent to each person and where to act accordingly” (Wilson and Morgan, 2011, pg.15). Doing so, might imply the identification of the most valued attributes of friendship, and cultivate a Brand Conscience, where “they cannot be true empathic friends and profit-centred parasitic opportunistic friends. They cannot be seen as friends with a conscience, but never consider (1) what that really means, (2) investing altruistically for the benefit of their friends, even if gratitude is never reciprocated, and (3) moving the pursuit of profits to the back seat, so that they selflessly serve their friends, who then reciprocate with loyalty and patronage” (pg.8).

Moreover, in order for a relationship between brands and consumers to be developed, it is necessary to take into account the reasons that lead consumers to participate in this emotional dialogue. That is, the factors that contribute to engagement with the brand. For this it is important to consider three key factors: trust, loyalty, and satisfaction.

From a marketing perspective, trust is a key factor in establishing a long-term successful relationship (Dwyer et al, 1987; Anderson and Narus, 1990), and it plays a significant role in the activities of the consumer since it affects the maintenance of market share elasticity to price and usually contributes to the reduction of uncertainty (Gommans et al, 2001). Trust is also a linked with building and maintaining brand loyalty (Cowles, 1997; Doney and Cannon, 1997; Chaudhuri and Holbrook 2001).
For Jap and Weitz (1995) trust is the “the ability to reliably predict the actions of the other party in the relationship and the belief that the other partner will not act opportunistically if given the chance to do so” (pg. 2). Morgan and Hunt (1994) conceptualize trust as “existing when one party has confidence in an exchange partner's reliability and integrity” (pg. 23). In turn, Moorman, Deshpande and Zaltman (1993) define it as “a willingness to rely upon an exchange partner in whom one has confidence” (pg. 315). Doney and Cannon (1997) describe the object of cognition as “the perceived credibility and benevolence of a target of trust” (pg. 36).

In other words, trust has been considered from two perspectives. From a behavioral point of view it is considered as the willingness to rely on another (Kumar et al., 1995; Geyskens et al., 1996; Siguaw et al., 1998). From a cognitive perspective, trust is associated with a set of beliefs (Anderson and Narus, 1990; Doney and Cannon, 1997). Considering trust as a cognitive component, the literature suggests that the term should be defined according to three types of belief (see for example, Mayer et al. 1995; Ridings et al. 2002): competence (consumer's perception that the other party has the knowledge and skills to act respectfully and meet their needs) (Coulter and Coulter, 2002), honesty (the belief that the second part will keep their word, fulfill their promises and be honest) (Gundlach and Murphy, 1993; Doney and Cannon, 1997), and benevolence (reflects the belief that one party is interested in the welfare of the other, the willingness of the other party to make an effort to achieve common objectives) (Ganesan, 1994).

For Morgan and Hunt (1994), the behavioral component comes from the cognitive component and as such it should be seen as a trust indicator. That is, the will or ability to trust the other party comes from the fact that there are previously held cognitive reasons (beliefs) that justify this behavior.

Loyalty is another concept widely discussed in the marketing literature and that has received various definitions over time. Engel, Kollat and Blackwell (1982) defined it as “the preferential, attitudinal and behavioral response toward one or more brands in a product category expressed over a period of time by a consumer”. Other researchers defined loyalty as “a favorable attitude toward a brand resulting in consistent purchase of the brand over time” (Assael, 1992, pg.87). According to
these latest definitions, loyalty is expressed by an intent to maintain a relationship in the future, expressed in continued purchases. However, this measure of loyalty has been criticized, since consumers with low bonds and little loyalty can report high expectations of continuity, due to the perceived high costs of change or due to lack of time to evaluate alternatives (Oliver, 1999). Therefore, Oliver proposed a definition of loyalty as “a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same–brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior” (1999, pg.34). Thus, loyalty implies a preference for a particular brand or company, although other suitable alternatives. Furthermore, “for a consumer to become and remain loyal, he or she must believe that an object firm’s products continue to offer the best choice alternative” (ibid., pg. 35).

Commonly, loyalty has been analyzed according to two points of view: loyalty in attitude and in behavior (Gremler, 1995; Hallowell, 1996; Auh et al., 2007). The formation of an attitude precedes behavioral intention and actual behavior, and is defined by the feelings that lead to the general attachment to the people, products, or services of an organization. Baldinger and Rubinson (1996) found that highly loyal buyers tend to remain loyal if their attitude towards the brand is positive. Furthermore, the ability to convert a switching buyer to a loyal buyer is higher if the buyer has a favorable attitude towards the brand. On the other hand, loyalty in behavior has been defined in terms of repeat purchase behavior, frequency of visits to a store, or percentage of money spent (Nilsson and Olsen, 1995). Between these two dimensions, Mittal and Kamakura (2001) suggest another that represents the intention to act in the purchase decision process, a predisposition to buy a brand for the first time or the commitment to repurchase the existing brand: behavioral intention.

Obtaining customer loyalty has been considered a crucial aspect to achieve success and sustainability over time (Keating et al, 2003), since it not only contributes to future purchase intentions, but also promotes high levels of positive word of mouth (Hallowell, 1996), lowers price sensitivity (Lynch and Ariely, 2000), helps obtain a
more stable and higher income (Knox and Denison, 2000), lowers the turn to competitors (Yi and La, 2004), allows maintaining premium prices, gives more bargaining power to distribution channels, reduces sales costs, and brings synergistic benefits of brand extensions of product/service categories (Reichfeld, 1996).

For some researchers, the link between customer satisfaction and loyalty seems almost intuitive and various researchers have tried to confirm it (Newman and Werbel, 1973; Woodside et al. 1989; Cronin and Taylor, 1992). The findings obtained suggest that the strength of the relationship between satisfaction and loyalty varies significantly according to different conditions. For example, Jones and Sasser (1995) found that the strength depends on the structure of the competitive industry. Oliver (1999) found that satisfaction leads to loyalty, but true loyalty can only be achieved when other factors are present. Moreover, loyalty implies satisfaction, but satisfaction does not necessarily lead to loyalty (Waddell, 1995, Oliver, 1999).

We get satisfaction when we realize that our expectations regarding the performance of the other party were met or exceeded. Dissatisfaction occurs when these expectations are not met. For Gruen (1995) satisfaction is “the extent to which benefits actually received, meet or exceed the perceived equitable level of benefits” (pg. 457). Some authors believe that the mere fulfillment of expected performance may not necessarily lead to satisfaction, but to a neutral feeling of indifference. As a result, satisfaction happens when performance exceeds the predictions (Bauer et al, 2002).

In short, if a customer is satisfied with a brand, trusts it, and is loyal, then the company has succeeded in achieving engagement with the brand which is, indispensable for a brand/consumer relationship and for achieving another important factor: making its customers brand ambassadors.

2.2.4. SNS from the consumer perspective

Since its inception, SNS such as Facebook, MySpace and LinkedIn have become digital spaces capable of attracting millions of users in various age groups on a worldwide scale (Boyd and Ellison, 2007; Lenhart and Madden 2007), and the
applications and features of these types of websites have changed the way Internet users communicate and interact with members of their social networks. This has led to meaningful changes in the media landscape (Cooke and Buckley, 2008), and the burgeoning of a new form of computer-mediated communication around the world connected by Internet, where the many-to-many, one-to-many and one-to-one communication models prevail (Barreto, 2013).

The main question that stands out is “why are online social networks so popular?” This is a question that can be answered through a multidisciplinary point of view, including sociological, psychological and even biological perspectives.

First of all, human beings like to be informed. This conscious or unconscious information need (for more information see for instance Taylor, 1962) supports people in the two roles they play as members of society - as citizens and consumers (Moore and Steele, 1991), and varies considerably from individual to individual, because they are inherently different and belong to different social groupings.

On the other hand, social interaction per se is also a physical human need and an unavoidable occurrence. The following findings are representative of this biological need and its effects: people who have close connections with others are not only happier but are also mentally and physically healthier than people who lack stable and meaningful social support (McAdams, 1986). Loneliness shows up in measurements of stress hormones, immune function, and cardiovascular function (Hawkley et. al., 2006); lack or loss of interpersonal relationships also leads to negative emotional experiences such as anxiety, depression and feelings of isolation (Baumeister and Tice, 1990; Simpson, 1987); forming and maintaining social bonds is positively correlated with happiness in life and positive life outcomes (Baumeister and Twenge, 2003; Myers, 1992); finally, interaction with others is a natural behaviour that according to recent research from the University of Padova appears as early as week 14 of gestation (Castiello et al., 2010).

From a sociological point of view, human beings are inherently driven by a desire to form and maintain interpersonal relationships (Baumeister and Leary, 1995; Bowlby, 1969, 1973; Maslow, 1968; McClelland, 1951; Murray, 1954; Stevens and Fiske, 1995). This need for social inclusion can also be seen as a way to survive prevalent
since the early days (Caporael and Brewer, 1995; Wilson, 1978), when rejection from the group would have meant death to the hominids. Since then, the survival value of interdependence has evolved into a set of internal mechanisms that propel human beings into social groups (Stevens and Fiske, 1995) and predispose them to relate with others, to experience affective distress when social relationships are denied or dissolved, and to experience pleasure or positive affects from social contact and relatedness (Baumeister and Leary, 1995). For Abraham Maslow (1968), when people could not meet this need of belonging, their need for self-esteem would not be satisfied either. In other words, without being first accepted as part of a group or by others, self-esteem doesn't develop properly. That is why people develop social bonds with relative ease under even the most adverse circumstances (Tajfel, 1970) and why the frequency with which adolescents use SNS can influence their social self-esteem and well-being (Valkenburg, Peter, and Schouten, 2006).

SNS not only answer these needs for being informed and for social inclusion, but also facilitates them, by unifying different social networks in which the individual belongs, and by making it easy to catch up with them quickly (Silverthorne, 2009). This fact is supported by previous research that suggests that most SNS primarily support pre-existing social relations, although exceptions exist. That is, people interact on this type of websites with other people who are already part of their extended social network (Boyd and Ellison, 2007). When Danah Boyd (2007) asked some teenagers the reason why they chose to be part of the SNS MySpace, the answered she got was, “cuz that’s where my friends are” (pg. 9). When she asked what they do on the site, they answered, “I don’t know... I just hang out” (pg. 9).

These reactions lead us to one of the other reasons for the success of SNS – the social influence, which is defined as the change in an individual’s thoughts, feelings, attitudes, or behaviors that results from interaction with others who are perceived to be similar, desirable, or experts (Rashotte, 2006). This is particularly true among adolescents (Urberg et al., 2003).

Another explanation that supports the endorsement of SNS is the social comparison theory, suggested by Festinger (1954). According to this theory individuals evaluate their own opinions and desires by comparing themselves to others perceived to be
reasonably similar to them. The advantage of SNS is that they make this comparison process easy.

The principle of homophily can also be applied to explain the adoption of SNS by many users. Since we like and tend to spend time with people with whom we identify ( Lazarsfeld and Merton, 1954; McPherson, Smith-Lovin, and Cook, 2001), SNS have impacted both the efficiency of maintaining and acquiring desired relationships.

Furthermore, SNS are unique websites that enable users to articulate and make visible their social networks. This can result in connections between individuals that would not otherwise be made, between “latent ties” ( Haythornthwaite, 2005) who share some connection.

Finally, SNS are relatively easy and enjoyable to use (Pinho and Soares, 2011). The type of design of the SNS is also crucial as it influences the level of adoption. Lorenzo-Romero et al. (2011) have also predicted that the perceived usefulness of SNS have a direct impact on the intention to use them, and an indirect impact through attitude. Another conclusion drawn from their study is that ease of use has a negative influence on perceived risk, although perceived risk is not a significant determinant of how useful SNS are perceived to be.

Despite all the reasons for using SNS, it is the ongoing levels of activity of the network users that determine the site’s continuing success ( Stroud, 2008). What attracts users to the site is a continually changing digital content (e.g., messages, pictures, photos, music, videos, blogs) generated by other users (Trusov et. al. 2006). And even though the mainstream media provides stories of online evidence that SNS can be used against users in job interviews, users continue to publish personal data suggesting that their desire for identity is worth the calculated risk (Kent, 2008). Moreover, users trust both the data found on individuals’ profiles and the wisdom of publishing data about themselves (Dwyer, Hiltz, and Passerini, 2007).

- What makes people connect with brands?

By knowing why consumers develop and maintain relationships with brands,
relationship literature advances by understanding which constructs should be measured, and brands find new ways for improving their performance and consequently strengthen their competitiveness.

According to the findings from Lab42’s study (2012) concerning the SNS Facebook, users find brand pages highly valuable – in fact, 87% of people on Facebook “like” brands. The major motivations for users to like a brand on Facebook are: to get access to promotions and discounts; because they are loyal consumers or they trust the brand; because a friend has liked the brand; or even to help out a friend. In addition, 82% of people think Facebook is a good place to interact with brands; 75% feel more connected to a brand on Facebook and 50% of consumers think a brand’s Facebook page is more useful than a brand’s website.

However, 46% of users that liked a brand have no intention to buy from the brand, whether because they just wanted to have a free item, or because they can’t afford the brand’s products (Lab42’s research, 2012). In this case, consumers can actually achieve self-actualization, even though they do not even consume the tangible product, since the value also lies in the brand, rather than only in the commodity (Wilson and Morgan, 2011).

On the other hand, consumers also find reasons to “unlike” a brand on this website, specifically when brands post too frequently; when consumers stop liking the brand; when they have a bad customer experience; or if they feel embarrassed to like it publicly. Regarding the last reason, it is worth mentioning that the three main categories social media users find most embarrassing are: adult novelty items, diet/weight loss products and health and wellness products or services.

As for the reasons given for not liking a brand, they are the following: brands clutter the user’s newsfeed (47%), consumers don’t want to be contacted (36%), they have concerns about privacy (30%) and because they use the SNS only to post things relevant to their lives (27%).

For Ashworth, Dacin and Thomson (2009), there are six possible relationship functions: knowledge – a relationships exists because it helps the consumer to make sense of his or her situation; utilitarian – a relationship based on the ability of the
brand to consistently and reliably aid in the achievement of other goals, that is, the
relationship is fostered (or terminated) based on rewarding (or punishing)
consequences of that relationship; hedonic – a relationship based on the ability of
the brand to directly inspire a variety of positive affective reactions in the consumer;
value-expressive – a relationship based on the consistency of the values associated
with the brand and the values central to the consumer (similar to the concept of
“identification” as it has been conceptualized in the relationship literature),
meaning, consumers are externally motivated to form relationships with brands for
the social acceptance that comes from creating an image that others value and
respect; social-adjustive – a relationship that exists because consumers’ association
with the brand creates a desired impression or to receive social approval; and finally,
affiliation – a relationship that serves individuals’ basic needs for friendship and
belonging.

To sum up, SNS are online spaces capable of answering users primary needs, which
explains their growing popularity among users of different ages and origins. From a
brand perspective, SNS are also capable of meeting strategic and commercial goals.
Whether as online advertising spaces (whenever the phenomenon of banner
blindness does not occur), interaction platforms, where friendship with customers
can developed, or as viral marketing tools, SNS can be used by brands to add value
to their product/services and improve their brand equity.

Regarding the latter, brands should bear in mind that the process of social
interaction and spread of information is not equal to everyone, and each user acts
differently according to their personality, which means that SNS users are not an
homogenous groups regarding their influence and value to the brand.
2.3. Social dynamics and the spread of information

2.3.1 The Social network phenomenon and the spread of information

The notion of a “social network” was first introduced by J.A. Barnes (1954) and since then many definitions of it have arisen. For Baker (1999) social network can be described as individuals or groups linked by some common bond, shared social status, similar or shared functions, or geographic or cultural connection. They form and discontinue on an ad hoc basis depending on specific need and interest. From an informal, transient form of association, like the flow of gossip, the mobilization of social movements and political campaigns, and the maintenance of patron-client relation, social networks represent groups of persons who do not necessarily know each other or share anything outside the organizing criteria of the network (Calhoun, 2003). Social networks are unique and singular to each individual. However, because each social network has a network structure, a person can have different social graphs depending on what relationship we want to focus on. Moreover, each person’s network is relatively independent from each other. “Yet, the analyses do not necessarily assume that the characteristics of network members – and their ties with the person at the center – are independent from each other or from the person at the center” (Wellman, 2007, pg. 352).

Social networks do not necessarily have to be made of human connections. In fact, they can also represent a web of relations and flows between organizations, animals, computers, etc. For this reason, network analysts use the terms ego (from whose standpoint the network is defined) and alters (those who are connected to an ego) to describe the analyzed actors of a network (Wellman, 2007).

Actors of a social network can have weak or strong ties. Tie strength is a multidimensional construct that represents the strength of dyadic interpersonal relationships in the context of social networks (Money, Gilly, and Graham, 1998, pg.79), and includes closeness, intimacy, support, and association (Frenzen and Davis, 1990). According to Marsden and Campbell, (1984) the strength of the tie may range from strong to weak, depending on the number and types of resources actors exchange, the frequency of exchanges, and the intimacy of the exchanges between them. While for Gummesson (2004) the strength of a tie, with unlimited variations,
can be assessed with the help of four properties: durability, emotional intensity, closeness, and reciprocal exchange of services (Gummesson, 2004).

Strong ties are characterized by “a sense that the relationship is intimate and special, with a voluntary investment in the tie and a desire for companionship with the partner; an interest in frequent interactions in multiple contexts; and a sense of mutuality of the relationship, with the partner’s needs known and supported” (Walker, Wasserman, and Wellman, 1994, pg.57).

For Granovetter (1973), we all have strong ties with some members of our network, but these strong ties are limited in size. In other words, it is not possible to have strong ties with everybody, which is why there are also weak ties with a large number of contacts. The stronger the tie between two people, the more likely that their social worlds will overlap, which means that they will have ties with the same third parties, due to the transitivity factor built into them. Homophily, the tendency of individuals to associate and bond with similar others, can explain this phenomenon: if A is similar to B, and B is similar to C, then A and C are likely to share some similarity as well (Borgatti, Lopez-Kidwell, 2011). Granovetter describes the case where this condition is violated as the “forbidden triad.”

A different network property proposed to help make sense of the formation and dynamics of social networks is called the “bridging ties” property, which can be described as a tie that links a person to other people who are not connected to their other friends. More technically, a bridge is a shortcut, a tie between A and B, which, if removed, would leave a very long path (if any at all) connecting A to B. These kinds of (bridges) ties are seen as a potential source of novel ideas, because they bring new ideas to a social network from other social networks they belong. On the other hand, strong ties are unlikely to be the sources of novel information, and to act as bridges.

Gummesson (2004) has introduced to the study of social networks the idea of the “significance of the insignificant”. According to this theory everything that happens in a network (events and factors) creates ripples through the links to other nodes. So, even a small and in-itself insignificant event or factor can have significant
consequences. The popular example from Edward Lorenz of the “butterfly effect” from the chaos theory exemplifies this concept.

Another important finding concerning social network analysis stresses how important it is for a node to be well connected (Bonacich, 1972). For instance, “a node with five contacts that have no other contacts has little exposure to information flowing through the network. A node whose five contacts are the most central nodes in the network will have great exposure” (Borgatti and Lopez-Kidwell, 2011, pg. 43-44). Therefore, nodes whose ties have more ties have greater exposure to (i.e., more chances of receiving) whatever is flowing through a network and to expose others (Freeman, 1979; Borgatti, 1995, 2005). Furthermore, if we assume that the time it takes for information to move along a network path is proportional to the length of the path, then nodes that are closest should, on average, receive flows more quickly (Freeman, 1979; Borgatti, 1995, 2005).

In relation to the dynamics of a network, it is interesting to emphasize that nodes positioned along the only or best paths between others may be able to benefit by controlling, filtering, or coloring the flow, as well as charging rents for passing along the flow (Freeman, 1977). Also, nodes located in the same general areas, e.g., connected to the same nodes (Lorrain and White, 1971) will tend to hear the same things and therefore have equal access to opportunities provided by network flows (Burt, 1976).

Another principle that can explain the social network phenomenon is the “small-world phenomenon”, also known as “six degrees of separation” theory, or “human web”, originally formulated by Frigyes Karinthy (1929). According to this theory, popularly known as “six degrees of separation”, coined by the playwright John Guare in 1990, all individuals are separated by each other by no more than six contacts.

In the 1950s and 60s, a stream of mathematical research sought to explain coincidences of mutual acquaintanceship (de Sola Poole and Kochen, 1958/1978; Rapoport and Horvath, 1961). The intention was to show that societies are much more close-knit than popularly believed. Stanly Milgram (1967; Travers and Milgram, 1969) supported this theory by finding that paths linking random Americans were short, and that people were able to find these short paths. Twenty years later, Watts
and Strogatz (1998) wanted to understand how human networks could have such short average distances, given that human networks were so clustered - a property which was known to lengthen network distances (Rapoport and Horvath, 1961). They found that adding even a small number of random ties to a heavily clustered network could radically reduce distances among nodes. In other words, these random ties act as bridges between clusters. Quite recently Leskovec and Horvitz (2008) found that the average length of the shortest path between any two people on this system is around 6.6—a number very close to Milgram’s, and obtained by utterly different means.

However, recently David Liben-Nowell and Jon Kleinberg (2008) found in their research pertaining to the spread of a chain letter that the structure of the tree challenged the small-world intuitions. Rather than fanning out widely, reaching many people with only a few degrees of separation, the chain letter spread in a deep and narrow pattern, with many paths consisting of several hundred steps. The short chains in the social network were still there, but the chain letter was getting to people by much more roundabout means: when recipients forward the chain letter at different times to highly overlapping circles of friends, it can in effect “echo” through dense clusters in the social network, following a snaking path rather than a direct one.

Moreover, Wu et al. (2004) examined patterns of email forwarding within an organization and found that email forwarding chains terminate after an unexpectedly low number of steps. They argued that unlike the spread of a virus on a social network, which is expected to reach many individuals, the flow of information is slowed by decay of similarity among individuals within the social network. Similarly, in a large-scale study of the effectiveness of word-of-mouth product recommendations, Leskovec, Adamic, and Huberman (2006) found that most recommendation chains terminate after one or two steps.

Like Wu et al., Liben-Nowell and Kleinberg (2008) studied the patterns of forwarding two popular email petitions. Against their expectations, the forwarding chains produced long and narrow, rather than bushy and wide, trees. In these studies the structure of the underlying social network was not directly visible but had to be
inferred by observing new signatures on the forwarded petitions.

Further principles have emerged, such as “densification effects,” in which the number of links per node increases as the network grows; “shrinking diameters,” in which the number of steps in the shortest paths between nodes can actually decrease even as the total number of nodes is increasing (Leskovec, Kleinberg and Faloutsos, 2005); and the notion of “triadic closure”, in which links are much more likely to form between two people when they have a friend in common (Rapoport, 1953). Interestingly, research based on online data has considered how friendship and communication depend on non-geographic notions of “distance”, which means that the probability of knowing is more affected by similar occupations, cultural backgrounds, or roles within a large organization. Also, Leskovec et al. (2007) found that the distribution of cascade sizes follows a “perfect Zipfian distribution” (pg. 2) that is, a power law. In their study, the networks were derived from the observed links between blog posts, i.e., from the diffusion of information.

For the purpose of understanding how human beings interconnect, it is worth mentioning the "preferential attachment" principle, of Barabási and Albert (1999), which analyzes networks from a socialization or relationship building perspective. According to this principle, nodes that already have many links will tend to acquire other nodes at a greater rate (Newman, 2003) due to their highly-linked position, which makes them easier to reach. Furthermore, preferential attachment can lead to highly skewed distributions of links, with certain nodes acting as highly connected “hubs” (Albert and Barabási, 2002).

In the preferential attachment model, the graphs are constructed in a random, “rich-get-richer” fashion: a newly entering node connects to \( m \) existing ones chosen randomly, but gives preference to nodes that are already popular, that is, have many neighbours. The parameter \( m \) controls the density of the graph, i.e., the ratio of the number of present edges (links or ties) to the number of all possible edges. For these graphs, the authors empirically discovered a power-law of \( k^{-3} \), which was proven mathematically by Bollobás, Riordan, Spencer, and Tusnády (2001). A number of similar models emerged at the same time leading to a power-law distribution.
Finally, Grossetti’s studies (2007) have shown that despite the evolution in communication methods, network structures have hardly changed since the 1970s, and that social life constituted by social networks has remained remarkably stable.

2.3.2. Social influence and innovation diffusion:

Sociologist have called the “diffusion of innovations” (Rogers, 1995) the process of information contagion, from person to person, as in the style of an epidemic, by which people influence one another over longer periods of time\textsuperscript{11}.

Some basic mathematical models for the diffusion of innovations posit that people’s adoption of new behaviors depends in a probabilistic way on the behaviors of their neighbors in the social network. In other words, as more and more of your friends buy a new product or join a new activity, the more likely you are to do so as well. Therefore, the probability of joining groups in a large online community can be seen as a function of the number of friends who already belonged to the group (Backstrom et al., 2006).

These findings are also supported by Cha, Mislove and Gummadi’s findings (2009) which give empirical evidence that social links are the dominant method of information propagation, accounting for more than 50% of the spread of favorite-marked pictures.

It has been also note that there is a “diminishing return” pattern in which the marginal effect of each successive friend decreases (Backstrom, et al. 2006; Leskovec, et al. 2007). In many cases, an interesting deviation from this pattern is observed—a “0–1–2 effect,” in which the probability of joining an activity when two friends have done so is significantly more than twice the probability of joining when only one has done so.

Doerr et al. demonstrate that rumor spreading can be extremely fast in social networks, even though this process is not organized centrally and the network is not designed in some intelligent way. The speed the rumor spreads could be due to the

\textsuperscript{11} However, the probability of becoming infected is proportional to the number of neighbors being infected.
fruitful interaction between hubs, which have many connections, and average users with few friends. The hubs make the news available to a broad audience, whereas average users quickly convey the information from one neighbor to another. Therefore, small-degree nodes quickly learn a rumor once one of their neighbors know it, and then again quickly forward the news to all their neighbors.

However, empirical studies have produced conflicting results, stressing the importance of distinguishing the content or type of the message that is being spread. For instance, previous studies suggest that recommendations chains terminate after one or two steps (Leskovec, Adamic, and Huberman 2006), whereas news transfer reaches many individuals within a social network (Lerman and Ghosh, 2010), and this discrepancy does not seem to depend on the similarity between users, at least when similarity is measured by number of edges between them.

The type of behavior each individual adopts inside a social network also influences innovation diffusions. That is, information dynamics depend on the role adopted by the person (or node): some might be more active and inform other members by sharing information (such as mavens and opinion leaders); others may be the first to adopt new practices (like innovators); while others may even simply lurk, meaning, merely observe with out contributing to the discussion or sharing information (lurkers).

The following is a list of some behavior categories in regard to innovation and information adoption and sharing.

- The influential people

For many years it has been suggested that people’s choices, behaviors, and opinions are affected daily by common people, even unconsciously, through interpersonal communication, whose influence is based on general knowledge and experience (Arndt, 1967; Bayns, 1985; Feick and Price, 1987; Abratt, Nel, and Nezer, 1995).

Nevertheless, not all social network members are equally influential in spreading information or word of mouth (Clark and Goldsmith, 2005). Some consumers are more likely than others to disseminate product or marketplace information, and
therefore are more valuable to companies (Feick and Price, 1987; Williams and Slama, 1995).

For Gladwell (2000), this influential process can be compared with the phenomenon of spreading epidemics, where ideas and products behave like viruses. Both phenomena share the fact that there is a point when the idea or the epidemics rises or falls dramatically. This “tipping point” is no coincidental and the “Law of the Few”\textsuperscript{12}, the “Stickiness Factor\textsuperscript{13}” and the “Power of Context\textsuperscript{14}” can determine when that point is reached.

These everyday influencers have been attributed many designations and even definitions throughout the years, but one common characteristic has remained: their power to spread information and influence people.

One group of people considered influential are opinion leaders. They represent a major source of positive or negative word-of-mouth communication (Gilly, Graham, Wolfinbarger, and Yale, 1998; Leonard-Barton, 1985) as they are product-specific experts. Opinion leader’s knowledge make them unique from other consumers, and for that reason Clark and Goldsmith (2005) suggests that the need for uniqueness provides a partial explanation for their desire to be seen as leaders in their specific product domain. Although they are experts in a specific topic, they do not need to have personal experience on that area (Kontos et al., 2011).

Innovators are also known for being influential within specific product categories, but what distinguishes them from opinion leaders is that they tend to adopt products comparatively early within a given social system (Rogers, 1995). To be precise, the trait of innovativeness is present in all consumers in varying degrees (Midgley and Dowling, 1978), but not all express it equally.

A third popular group, and well established in the marketing literature (e.g. Feick and Price, 1987; Elliott and Warfield, 1993; Williams and Slama, 1995; Walsh et al., 2001),

\textsuperscript{12} According to Gladwell (2000) the success of any kind of social epidemic is heavily dependent on the involvement of people with a particular and rare set of social gifts.” Economists call this the ”80/20 Principle, which is the idea that in any situation roughly 80 percent of the ‘work’ will be done by 20 percent of the participants.

\textsuperscript{13} Refers to the specific content of a message that renders its impact memorable.

\textsuperscript{14} Suggests that human behavior is sensitive to and strongly influenced by its environment.
are market mavens\textsuperscript{15}. According to Puspa and Kühl (2006) the conceptual definition of market mavens was first developed by Feick and Price in 1987. For them, market mavens are “individuals who have information about many kinds of products, places to shop, and other facets of markets, and initiate discussions with consumers and respond to requests from consumers for market information” (Feick and Price, 1987, pg. 85).

Market mavens are considered as consumers highly involved in the marketplace, a source of information about a multitude of products and brands, as well as the marketplace in general (such as places to shop and find sales) (Feick and Price, 1987). Therefore, they are both sources and seekers of information (Higie et al., 1987).

Mavens and opinion leaders share a level of expertise that allows them to influence other consumers, but mavens do not hold or tend to be as influential within a specific product category through an enduring involvement with a particular product class (Bloch and Richins, 1983) as opinion leaders do. In stead, they are motivated to learn about products in a wide variety of product classes, i.e., the marketplace in general (Feick and Price, 1987), driven by the need to become knowledgeable and to share market information. Nevertheless, some researchers consider market mavens as generalized opinion leaders (Engelland et al., 2001; Goldsmith et al., 2003; Steenkamp and Gielens, 2003).

Mavens are not necessarily early purchasers of new products or users of products about which they have information (such as innovators). In fact, they may acquire and pass on information on products they do not even buy or use (Walsh, Gwinner, and Swanson, 2004).

To sum up, market mavens are a source of general information about the marketplace, with the possibility of becoming opinion leaders or early purchasers of particular products (Feick and Price, 1987). Their knowledge comes from heavy consumption of diverse sources of media that expose them to a variety of market-related information (Feick and Price, 1987; Higie, Price and Feick, 1987). Besides,

\textsuperscript{15} The word “maven” comes from Yiddish and means one who accumulates knowledge; ‘a person who has special knowledge or experience; an expert’ (The American Heritage Dictionary of the English Language, 2000, p.165).
they have a tendency to be recreational shoppers (Feick and Price, 1987) and to shop and buy more than other consumers (Goldsmith, Flynn, and Goldsmith, 2003).

Translating these features of market mavens into graph theory, Budak et al. (2010) define mavens as those that start a large number of cascades (they are the original source of new information) and have high influence on their neighbors.

Some authors make a distinction between mavens and e-mavens. Phelps et al. (2004), for instance, consider e-mavens people who acquire and spread information via electronic platforms such as email. As noticed by Jason Ho and Melanie Dempsey (2010), this distinction is made according to the channel through which information is acquired and spread. However, I believe that if a person has a propensity to behave as a maven, these characteristics are independent of the channel (whether online or offline), especially because both realities are inter-connected. Similarly it has been show that the two concepts of “online word of mouth” and “(offline) word of mouth” should merge into one (simply word of mouth). Therefore, mavens should be defined by their relation with information (i.e., by the type of behavior assumed with the acquired information), and not by the channel used.

In his book “The Tipping Point” (2000), Malcolm Gladwell identifies two other important groups of people that influence the spread of messages within a social network, besides mavens: “connectors” and “salesmen”:

To Gladwell (2000), “mavens” operate as information gatekeepers: they gather information from different sources, evaluate it, and then choose which are to be spread through their network. Ultimately, they are seen as trusted experts in their own areas.

“Connectors”, on the other hand, are people with large number of contacts (or ties), able to spread information through their social network quickly. They are influencers not because they are experts but rather because they are acquainted with a significantly higher number people than the average person.

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16 E-mavens are not the same as Internet mavens, because the former include both email and the Internet in their channels (Belch et al., 2005).
Translated into a graph, this group, also called social hubs (Goldenberg et al., 2009), represents a node that has a high degree of centrality (Budak, Agrawal, Abbadi, 2010), which means that they have a large number of contacts and are part of many different worlds and subcultures. “The closer an idea or a product comes to a Connector, the more power and opportunity it has as well” (Gladwell, 2000, pg. 55). In other words, when an actor or node acts, the likelihood of his action being noticed by his social network members is greater, than the likelihood of other actors that don’t belong. According to social influence theories that action may or may not be imitated by the social network members of the actor. When it is, then the influence of the actor is confirmed. If the actor has more ties attached to him, then he act has better chances of influencing more people than if he wasn’t centrally positioned in a network.

Finally, “salesmen” are described as persuaders, capable of spreading the message through their force of character, despite their expertise in the area. They have high charisma and can sell ideas to almost anyone since they don’t give up easily. When reaching out to a person with an idea and being declined, a connector or a maven would give up, but a salesman tries multiple different methods of persuasion. In a social network graph salesmen are represented by nodes that have a large number of trials to activate its neighbours’ for cascades that the node itself is a part of (Budak et al., 2010).

In addition to the three groups suggested by Gladwell, Budak, Agrawal and Abbadi (2010) have included a fourth type of actor called a “translator”: “an actor that acts as a bridge between different interest groups and communities” (pg. 1), and is therefore capable of changing different contexts by spreading information through the communities in which he participates. This actor is determined by a more behavioral approach rather than depending solely on the structure of his network, distinguishing him from other similar actors studied in various contexts. They often have been referred to as structural holes (Granovetter, 1973), weak ties (Burt, 1992), negotiators (Ghosh and K. Lerman, 2009), and in the management literature as boundary spanners (Williams, 2002). In order to detect a translator, first we need to detect the community.
If we accept that individuals belong to more than one social network, then a social hub, a hub with many connections, is also linked to many other social networks through one tie, i.e. his direct contacts. In fact, any individual that belongs to more than one social network can be a translator or bridge of at least two networks or communities. So, a connector or social hub can also be a translator. However, despite the fact that we all belong to different networks, that does not necessarily mean we actually connect them or act as bridges. That is why translators differ from connectors and social hubs, since it is their behavior that determines their role and distinctness.

Budak, Agrawal and Abbadi (2010) have shown that the spread of information, or cascades on blogs involving at least one connector, salesman, maven or translator, are more likely to be successful than cascades that start with a connector, salesman, maven, or translator blog respectively. Furthermore, they observed that cascades with translators and salesmen reach a larger number of blogs than those with connectors and mavens, and that the combination of those actors has a much higher possible effect than what they have in isolation. Nevertheless, the authors stress that “different social networks provide different ways of interacting which means that certain actors, while not so significant in certain networks, can be highly influential in others”.

Table 1: Key influencers’ characteristics.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion leaders</td>
<td>Product-specific experts, regardless of their personal experience in a specific area.</td>
</tr>
<tr>
<td>Innovators</td>
<td>Earlier adopters.</td>
</tr>
<tr>
<td>Mavens</td>
<td>Both sources (they are heavy consumers of media) and seekers of information of a wide variety of products. They are not necessarily early adopters or even users/consumers of the products that they share information about.</td>
</tr>
<tr>
<td>Salesmen</td>
<td>Persuaders, capable of spreading the message through their force of character. They have high charisma and can sell ideas to almost anyone since they don’t give up easily.</td>
</tr>
<tr>
<td>Connectors,</td>
<td>Actors with a high degree of centrality in a network, therefore belonging to and</td>
</tr>
</tbody>
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89
<table>
<thead>
<tr>
<th>Social hubs</th>
<th>connecting different groups.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translators</td>
<td>Actors that bridge from one knowledge domain or local network to another which can be done with a single tie. They can also have high betweenness centrality.</td>
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</table>

- **Lurkers - the non-public participants of a community**

In the majority of literature we see “lurkers” described pejoratively as invisible, silent members of online communities (Lesched, 2005), those who do not contribute with post messages in a group (Preece et al., 2004), infrequent posters (Ridings et al., 2006), or even those who have not posted in the past 3 months (Nonnecke, 2000; Nonnecke and Preece, 2000).

These inactive, peripheral, and (not consensual) non-productive participants have been considered for some to be a problem for the community, selfish “free-riders” (Kollock and Smith, 1996), and illegitimate community members (Beaudouin and Velkovska, 1999; Parks and Floyd, 1996) that infringe the "netiquette" - the implicit rule of politeness of the Net (Pace, 2003).

In the last decade research findings have revealed that in many online communities the majority of members are lurkers (Jones and Rafaeli, 1999; Nonnecke and Preece, 2000; Nonnecke et al., 2004). Indeed, Nonnecke and Preece (2000) estimated that on average 45.5% of the membership of health-related online support groups might be lurkers. Similarly, according to Jakob Nielsen’s theory called “90-9-1”, 90% of users are lurkers; 9% post, from time to time; and 1% of users participate and contribute.

This fact has highlighted that there is limited evidence and limited understanding of the majority of community members and on the value these individuals may provide (if any), resulting in a new interest on them. Consequently, negative views started to be supplanted by a positive perspective, as noticed by Cranefield, Yoong, Huff (2011), largely as a result of Nonnecke’s work (Nonnecke 2000, Nonnecke et al., 2006; Nonnecke and Preece, 1999, 2000; Nonnecke et al., 2004). Because of Nonnecke et al. work lurkers started to be seen as having a desirable behavior, since they minimize repetitive questions and message overloading.
(Nonnecke and Preece, 1999); to be accepted as community members by active members (Preece et al., 2004); and to be recognized as able to learn through the report of other’s experiences (Arnold and Paulus, 2010). If all lurkers delurked (term used when a user posted or participated for the first time in the community), communities in their present form would become a chaotic message ground. Moreover, lurking is a highly active, methodical, and goal-driven process contributing to the satisfaction of a set of user-defined goals related to joining an online group (Nonnecke, Preece, Andrews, and Voutour, 2004).

The lack of visible online participation of lurkers does not mean necessarily that they assume a passive role in relation to the information obtained from members’ posters of the same community in different scenarios or contexts. For these reason, some researchers (such as Nonnecke, 2000; Nonnecke and Preece, 2001; Takahashi, Fujimoto and Yamasaki, 2002) use the expression of non-public participant to better describe this group, since there is “a multitude of back-channels of communication that often escape our examination” (Kollock and Smith, 1996, pg. 5). In deed, as stressed by Cranefield, Yoong and Huff (2011), few or any research has focused on the behavior/interactions of lurkers outside the community, in an online or offline environment, and how it might be related to their online lurking experience, with the exception of Willett (1998) and Takahashi et al. (2003).

In order to decide if lurkers are or are not legitimate participants of a community, the meaning of the term “participation” should be clarified. If we consider the Latin origin of the word, from the verb participare, besides the idea of contribution there are also the underlying concepts of sharing, inform, and communicate. If lurkers share the knowledge obtained from a community with other people in a different context, and if we consider that the goal of a community is to share information, then lurkers should be considered as legitimate participants, or, better yet, non-public but valuable participants that expand the influence of a community to different contexts.

Besides, in a communication process, there are at least two communication actors: the sender and the receiver of a message. The role of a receiver is not abrogated if he is influenced by the message or not, if he gives a feedback to the sender or not.
He remains an actor in the communication process because without him the communication would not exist. In the same way, if posters post with the goal of sharing information, then both posters and lurkers are receivers of a message and participants in a community.

Consequently, it seems evident that the simplistic “term lurker connotes a poorly understood, low-value and marginal role, characterized by a reluctance, or lack of readiness, to contribute the community more fully” (Cranefield, Yoong, Huff, 2011) and that this poor understanding does not adequately capture the facts.

Furthermore, a new communication model, applied to the advent of social media, such as the one proposed by Leshed (2005) (with intensity and publicity axes\(^{17}\)) is needed, such as a model, multidimensional in character, able to view the community as a holistic, polycontextual communication environment comprising diverse engagement spaces. In other words, a model that considers the full range of lurker’s online, as well as offline, activity, and the ways in which this knowledge transfer is influenced and influences. This means that lurking should be recognized as being only part of the picture, since individuals are continually crossing between specialized communication’s contexts (Cranefield and Yoong, 2009), not necessarily indicating a symptom of disinterest.

Blanchard and Markus (2004) believe that in order to avoid this binary distinction which presumes and reinforces a dichotomy of participants, a third type of online community members should be added - *leaders*. Accepting this suggestion, we’ll have leaders, who motivate the discussions; participants, active in the talks, but not great influencers; and lurkers, who read what others produce. However, others consider this participation pattern unjustifiable, since this classification overlooks a rich variety of other participation patterns (Leshed, 2005). Furthermore, even if it is not the main goal of participants to be influencers and assume a leader position, that can happen even though they are not the leaders of that community. Finally, by

\(^{17}\) Intensity indicates the frequency of total activities performed by a participant in the community. Publicity represents the degree of exposure in a participant’s activities: their ratio of public activities as posting to non-public activities as reading.
distinguishing the groups “lurkers” and “participants”, excludes the idea that lurkers are also participants.

On the other hand, Duggan (1999) suggests the introduction of new designations of membership, such as stranger, passer-by, lurker, participant, and regular. But even this categorization is not capable of describing the reality perfectly, as a participant could be a passer-by, and a lurker can also be a regular.

Huang and Farn (2009) have also contributed to this discussion by defining three online groups: 1) information shoppers, who are like onlookers, seldom posts messages and have little confidence in information found in a virtual community; 2) advice seekers, that seldom posts messages in a virtual community, yet believe in most information posted in a virtual community; and 3) advice providers, people who love to share their experiences and knowledge with other members, but rarely refer to others’ opinions.

For the last mentioned authors, lurkers are split into “advice seekers” and “information shoppers”. The main difference between these two groups is in their senses of belonging in formation of intention. In the case of advice seekers, the adoption of information depends on if they deeply rely on the community, which in turn comes from the feeling of being an integral part of the community. While information shoppers are influenced by both a sense of belonging and emotional trusts, which depends on posting behaviors. To sum up, beside social factors, information shoppers pay more attention to trust, whereas advice providers emphasize the role of perceived benefit.

A different method of classifying participants has been proposed by Takahashi et al. (2003) based on two criteria: which types of actions they take outside the online community, and whether or not the online community affects their thoughts. Therefore, they identified a new category of lurker (the active lurker), which can be described as the one who transfers the knowledge gained from lurking to the outside world. This new type of lurker can be subdivided into two subcategories: the active lurker as propagator - someone who propagates information or knowledge gained online to others, and the active lurker as practitioner - someone who uses this information or knowledge in their own or their organization’s activities. They
also conclude that passive lurkers can be divided into two types: the “active lurker candidate” and the “persistent lurker”, according to whether or not the online community affects the lurker’s thought, respectively.

However, for Willett (1998) the terms active and passive have a different meaning, hence he advocates for a dichotomy between active lurkers (lurkers who make direct contact with posters in an interactive mailing list or propagate information or knowledge gained from it) and passive lurkers (lurkers who only read for their own use).

It seems to me that if someone’s thought/attitude is influenced or changed, then it is expected that this person’s behavior, sooner or later, will also change, according to the new though/attitude (unless there is a cognitive dissonance). Therefore, using the suggested classifications of Takahashi et al. (2003), a lurker whose thought/attitude has changed will propagate or put into practice the new accepted change. Moreover, due to the impossibility of individually checking the behavior of each community’s lurkers over time, it is assumed that this change will eventually occur. Hence, all lurkers that were cognitively influenced by the content of a message (or messages in an aggregate level) should be assumed to be active lurkers. In this sense, passive lurkers are the ones that were not influenced cognitively, and, as a result, their behavior did not change. That is to say, the proposed distinction between passive lurkers, which depends on whether or not the online community affects their thoughts, is not realistic, and lurkers should be distinguished as either active or passive, according to cognition/attitude change criteria. In other words, in this particular case passivity expresses non-influence; while activity (whether it is cognitive or behavioral) expresses influence.

In order to better understand the role of these community members, special attention has been given to the motivations behind their behavior. Based on empirical findings, Nonnecke and Preece (1999) suggest that lurking is fundamentally a situated activity, since one can lurk in one community and actively post in another: “lurking is not a single behavior, but a complex set of behaviors rationales, and activities situated in a reach space of possibilities” (Nonnecke and Preece, 1999, pg. 3).
Later, Nonnecke and Preece (2001) surveyed 10 participants to determine the reasons why lurkers lurk. They found 79 explanations, the following being the most cited:

- Wanted to be anonymous, and preserve privacy and safety;
- Had work related constraints, e.g., employer did want work email address to be used;
- Had too many or too few messages to deal with, i.e., too many messages was burdensome, and it was easy to forget low traffic groups;
- Received poor quality messages, e.g., messages were irrelevant to topic or had little information value;
- Were shy about public posting;
- Had limited time, i.e., other things were more important.

A similar study, made by the previous researchers in collaboration with two others (Nonnecke, Preece, Andrews and Voutour, 2004), found that “just reading/browsing is enough” was noted by more than half of the lurkers (53.9%). The second most common reason for lurking, but much less prominent was “still learning about the group” (29.7%). In third place, 13.2% of lurkers indicated they were “going to lurk from the outset”. In the basis of the gratification model, the authors also conclude that lurking is capable of meeting member’s personal and informational needs through observation, rather than public participation (Nonnecke et al., 2004).

When compared to posters, lurkers join online communities for similar purposes, with personal reasons topping the list (92.6%), while work and school were a distant second and third motives (Nonnecke et al., 2004). However, lurkers and posters act differently, which reflects different characteristics.

As an example, previous research suggests that lurkers are significantly older than posters (Mo and Coulson, 2010). A possible explanation proposed by Mo and Coulson (2010) is that older participants are less experienced in using the Internet and online support groups, and, therefore, might have less sophisticated computing
skills in communicating with other members in the group, or feel less confident in using and being a member of the group.

Lurkers also reported spending significantly less time (both number of days and hours) accessing online support groups in an average week. This fact may be justified by the need poster have to check the group more frequently to see others members’ response and also to post their own messages.

Furthermore, in health-related support groups, lurkers are more likely to be in the asymptomatic stage of a disease, while posters are more likely to be in the advanced stage. Mo and Coulson (2010) suggest that lurkers use the communities to look for information about the disease, or to learn from other members’ experiences. While, posters’ attractions to the online support group appears to be more focused on participating in community interactions, to build professional relationships, to participate in conversations, to make friends, and to obtain empathic support (Nonnecke et al., 2006).

Finally, lurkers are more likely to lack the confidence regarding the usefulness of their posts (Bishop, 2007), or are more inclined to be shy, and introverted than posters, since they do not publicly ask questions, even though they want answers. These findings suggest that the intrinsic characteristics of the participants might determine whether the participants would lurk or participate through posting messages (Mo, Coulson, 2010).

- **Potential brand diffusers**

All influential groups are expected to help organizations achieve their information diffusion goals. However, due to the generalized nature of their knowledge and interactions with other consumers, mavens seem to be more attractive than opinion leaders and innovators to marketers of retail stores that carry a wide variety of products (Clark, Goldsmith, 2005). Plus, it is believed that mavens are typically more altruistic or are willing to help other consumers than innovators, opinion leaders, and early adopters (Geissler and Edison, 2005).
On the other hand, opinion leaders are product specific and their leadership comes from the leader’s interest in a specific product category (Bloch 1986; Jacoby and Hoyer 1981). Besides, they may not always play a primary role in the dissemination of information (Godes and Mayzlin, 2004). Similarly, early purchasers’ or adopters’ expertise are also related to a specific product.

Therefore, from a commercial point of view, mavens represent an attractive group, since they are naturally active information readers and diffusers, and are perceived as a credible source by other consumers (e.g. Kiel and Layton, 1981; Keaveney, 1995; Gilly et al., 1998).

Considering the classical two-step flow communication theory18, it has been suggested that companies should establish a close relation with this group by sending communication messages, like first-hand information about their products or services directly, so that they can disseminate it with other consumers or prospects, who seek and trust their advice (Geissler and Edison, 2005; Puspa and Kuhl, 2006). In order for that happen, first companies will have to establish a long-term win-win relation with mavens, but most of all gain their trust.

The benefits of this process are evident: the more brand influencers or ambassadors a brand gathers, the more likely it will achieve positive word of mouth coverage, that can lead to new marketing opportunities (Lester, Tudor, Loyd, Burton, 2012). In fact, this is not a novel idea, since it has already been suggested in the literature (Sheth, 1971; Kotler and Zaltman, 1976; Hennig-Thurau et al., 2004; Goldsmith and Goldsmith, 2008). However, the main obstacle is how to identify mavens.

Market mavens are not easily identifiable among opinion leaders, sophisticated consumers and early adopters (Puspa, Kühl, 2006), because so far a clear and universally accepted social and demographic profile of mavens has not been established (Feick and Price, 1987; Wiedmann Walsh and Mitchell, 2001, Geissler and Edison, 2005). In fact, there is no consensus regarding any demographic variables that distinguish market mavens from other consumers (Walsh et al., 2004;

18 Whereby the influence of the media is not always direct, and opinion leaders (after receiving the message from the media) influence their social network with their interpretation of the message. This theory was first introduced by sociologist Paul Lazarsfeld et al. in 1944
Geissler and Edison, 2005). For example, a study conducted by Kontos et al. (2011) applied to the health sector has shown that in the U.S.A. mavens are usually older female, with a larger social network, that have a moderate consumption of general media. However, previous studies have shown that mavens are more likely to be afro-americans (Feick and Price, 1987), slightly less educated than consumers in general (Feick and Price, 1987; Williams and Slama, 1995), and slightly younger than the average (Williams and Slama, 1995). Furthermore, in a Wiedmann et al. (2001) study applied to a sample of German consumers, the impact of gender and age in the normative tendencies of market mavens is not clear.

These findings suggest that behavior characteristics may constitute a better choice for describing and identifying mavens (Wiedmann et al., 2001), as opposed to demographic characteristics, since the relationships between market mavenism and personality is evident (Laughlin, MacDonald, 2010).

As noticed by Puspa and Kühl (2006), two main characteristics make a market maven: information possession and psychological predisposition to spread word of mouth or initiate discussions about market place (Feick and Price, 1987; Gladwell, 2000; Clark and Goldsmith, 2005).

This need that mavens feel to become knowledgeable and share market information is proved to derived from pleasure, entertainment value, and social satisfying benefits (Price, Feick and Higie, 1987; Clark and Goldsmith, 2005), along with a general altruistic desire to help others (Walsh, Gwinner, and Swanson, 2004). For Jason Ho and Melanie Dempsey (2010) the act of forwarding a message (specifically online content) has four potential motivations: (1) the need to be part of a group19, (2) the need to be individualistic, (3) the need to be altruistic, and (4) the need for personal growth20. Using FIRO theory (Schutz, 1966) from the interpersonal communication literature as a framework for their study, Jason Ho and Melanie

19 i.e., the “need to form and maintain at least a minimum quantity of interpersonal relationships” (Baumeister and Leary, 1995, pg. 499)

20 Meaning that forwarding online information may provide the sender with the ability to develop independence and leadership abilities. Robitschek (1998, pg.184) defined personal growth initiative as “active, intentional engagement in the process of personal growth.”
Dempsey (2010) found that two of the three key dimensions of the mentioned theory (inclusion and affection) are significant predictors of forwarding behavior.

Compared to non-mavens, mavens are more interested in smart buying (Slama et al., 1992), spending more time and money shopping (Goldsmith et al., 2003), despite being heavier users of coupons (Price et al., 1988).

Clark and Goldsmith (2005) found a positive relationship between market mavenism, opinion leadership, and global self-esteem. The willingness of mavens to serve as marketplace experts indicates that they are confident in their ability to obtain and comprehend marketplace information (Bearden et al., 2001; Clark, Goldsmith and Goldsmith, 2008). Moreover, the perception of being perceived as a trustworthy information source (Puspa, Kühl, 2006), is expected to encourage them to engage in information exchange, and to recognize themselves as dissimilar from other consumers, but operate within the bounds of societal norms (Clark, Goldsmith, 2005).

Dispositional optimism, need for cognition, and self-efficacy are also positively associated with mavenism (Geissler and Edison, 2005). The same authors also found that mavens are more likely than non-mavens to communicate with other consumers through new technology (Geissler and Edison, 2005) and further research suggests that mavenism is positively related to consumer innovativeness and negatively associated with resistance to change (Goldsmith et al., 2003; Andrews and Benedicktus, 2006).

There is also a different group that may represent an opportunity for companies when it comes to spreading information or tendencies, though not much is known about this group. They have a well-connected position in a social network and for this reason they are called the connectors, “social hubs” (Jacob Goldenberg, Sangman Han, Donald Lehmann, Jae Weon Hong, 2009), or “network hubs” (Rosen, 2000).

Being a social hub means that the node is degree connected and that there is efficiency in information diffusion (in velocity or in market size) (Reis, 2010), but
does not necessarily mean that this node is an expert or has a specific knowledge, or feels the same motivations as mavens to share information and influence people’s opinions. In deed, Trusov et al. (2008) did not find that having many links makes users influential per se.

On the other hand, it should be note that even if a hub is not an earlier adopter\(^\text{21}\), due to its central position in a network, it is more likely to adopt earlier due to greater exposure to earlier adopters (Goldenber et al. 2005). Therefore, hubs do not necessarily need to be innovative to adopt earlier in the diffusion process (2009). Moreover, by adopting a new product or idea earlier they can influence other social network members that are easily influenced. According to Watt and Dodds (2007) findings, hubs can be responsible for triggering large-scale “cascades” of influence. A similar finding was obtained by Buddak et al., (2010), indicating that successful cascades always started from a connector and involved a large number of connectors.

Therefore, and using the words of Fisher (2011), “if marketers can reach these Connectors, they can reach many more consumers through them” (pg. 4). The same result is expected to be achieved by knowing which other influential group (such as mavens or opinion leaders) is highly connected with this group and then focus their message to them, as in a two-step flow process - “before a company can reach these connectors, it has to reach Market Mavens. If marketers reach Mavens, chances are Mavens will reach Connectors and Connectors will reach everyone else” (Gladwell, 2000, pg. 60).

Also, organizations should not neglect the potentialities of lurkers, since they can contribute to the increasing influence of an online community on its outside environment. For example, active lurkers can disseminate the topics discussed in an online community to others who are not members, or can use the information or knowledge received in their own or organizational activities, ultimately influencing with their behavior their social network.

\(^{21}\) Goldenberg et al. (2009) made a distinction between innovative hubs and follower hubs. They conclude that the former have a greater impact on the speed of the adoption process, while the later impact on the total number of adoptions.
Cranefield, Yoong and Huff (2011) have demonstrated the value of taking a broader, polycontextual view of the community, rather than focusing exclusively on the online sphere, by finding that follower-feeders (those who feed on ideas of whom they follow, then feed these ideas onto their own followers, maintaining a low online profile) lurked in one context but acted as proactive knowledge brokers in other settings. Both connector-leaders (those who made use of different online communication technologies to sustain their beliefs, enrich their understandings, and promote and broker knowledge) and follower-feeders were boundary-spanners by virtue of their overlapping community membership and their active transfer of knowledge across boundaries. Therefore, the role of follower-feeders is based largely around bridging the online/offline and visible/invisible community boundaries. For this reason, Cranefield et al. argue that in order to understand the nature and value of the different roles in a community, roles should be seen in relationship to their boundary spanning and knowledge brokering activities across multiple engagement spaces.

In an attempt to determine whether, and how, a company could successfully market its products through an amplified WOM campaign, Godes and Mayzlin (2005) found that non-loyal, rather than loyal, customers had the biggest incremental or marginal impact on sales. They also realized that acquaintances are important due to their peripheral position in a social network.

On the other hand, the investigation of Carl (2006) has shown that not specifically targeted or selected buzz marketing22 agents engage more intensively in WOM than non-agents counterparts. Agents do not just “talk more”, but a higher number and percentage of agents’ interactions include WOM episodes. Moreover, Carl’s study (idem) has also pointed out that a significant majority of paid agents’ WOM episodes about brands were casual or quotidian, meaning that they were not part of an institutionally sponsored buzz marketing campaign, and that the majority of the interactions surrounding the WOM episodes were not premeditated.

As a conclusion it can be stated that a possible brand ambassador does not

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22 For Thomas (2004), buzz marketing can be defined as the “amplification of initial marketing efforts by third parties through their passive or active influence” (pg. 64).
necessarily have to be loyal to a brand or to be a paid marketing agent. Any person could effectively create significant occurrences of buzz. However, by combining this fact with filtering mechanisms that identify and target key influencers to become buzz marketing agents, companies may achieve better results regarding the spread of information.

2.3.3. Word of Mouth Phenomenon

Social networks are an important component for the occurrence of word of mouth, since it helps to keep the flow of information going.

Researchers and practitioners have long recognized the phenomenon of “word of mouth” (WOM) as one of the most influential sources of information since the beginning of human society (e.g., Katz and Lazarsfeld, 1955; Coleman, 1966; Rosenzweig and Foster, 1995; Reynolds and Beatty, 1999; Kotler, 2000; Maxham and Netemeyer, 2002; Godes and Mayzlin, 2004).

For Arndt, one of the earliest researchers interested in the impact of WOM, this phenomenon is described as an “oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as non-commercial, regarding a brand, product or service” (1967, pg.3). According to Westbrook, WOM refers to “all informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers” (1987, pg. 261). In turn, Stern distinguishes WOM from advertising by its lack of boundaries, and adds that #WOM involves the exchange of ephemeral oral or spoken messages between a contiguous source and a recipient who communicate directly in real life [...] Consumers are not assumed to create, revise and record pre-written conversational exchanges about products and services. Nor do they ordinarily use poetry or song to discuss consumption. Finally, WOM communication vanishes as soon as it is uttered, for it occurs in a spontaneous manner and then disappears” (1994, pg.7). A more recent definition describes WOM as an interpersonal communication in which none of the participants is an organizational information source, and as the act of telling to, at least, a friend, an acquaintance or
a family member a satisfactory or unsatisfactory experience with a product (Halstead, 2002).

WOM has been examined through many marketing studies (Money et al., 1998), that focused on three essential factors: conditions under which consumers are likely to rely on others’ opinions, motivations to spread information, and the variation in strength of influence people have on their peers in WOM communications (Phelps et al., 2004). Nevertheless, and quoting Misner (1999), it is “the world’s most effective, yet least understood marketing strategy”.

- Reasons for the outcome of WOM

There is some indication that consumers are unlikely to engage in (positive) WOM, even if they have a good product experience, in comparison to their willingness to engage in negative WOM, following product failure (Holmes and Lett, 1977; Tarp, 1979), unless they feel high levels of motivation (Chaiken and Trope, 1999; Ajzen and Sexton, 1999; Fazio and Towles-Schwen, 1999). This motivation can be obtained by two possible goals: accuracy goals and impression goals. The first can be explained as the need to express impartial/valid opinions; while the second aims to bias the views that people express in order to fit in the current social context (Schlenker, 1980). That is to say, the beliefs are expressed in a selective way (Chen et al., 1996; Fazio and Towles-Schwen, 1999) in order to create a positive impression in others (Schlenker, 1980; Leary and Kowalski, 1990). Chung and Darke (2006) noticed, this fact is consistent with Dichter’s (1966) opinion that producing WOM could be seen as a way of getting attention and also of showing connoisseurship.

Previous findings suggest that WOM is driven by product/service performance and/or dissatisfaction/satisfaction with the purchasing process (Tanner, 1996; Anderson, 1998). When consumers/clients are satisfied or delighted with a product/service, positive WOM may ensue. On the other hand, when their expectations and perceptions were not successfully achieved, negative WOM may happen.

WOM can also be an outcome of loyalty. Bowman and Narayandas (2001) found that
customers that described themselves as loyal customers of a brand were significantly more likely to engage in WOM, but were less likely to become involved in it if their satisfaction was high. That is to say, their results show that loyal customers are more likely to engage in negative WOM, when they are dissatisfied.

Curiously, it was found that satisfaction has a stronger relationship with positive WOM than loyalty, while (dis)loyalty has a stronger relationship with negative WOM than does (dis)satisfaction (Matos and Rossi, 2008).

The results of two studies from Chung and Darke (2006) also suggest that WOM predisposition varies according to the type of product. In that sense, they argue that consumers are not only more likely to provide WOM for products that are relevant to self-concept (in comparison to utilitarian products), but they are also more likely to exaggerate the benefits of those products, again in comparison to utilitarian products. The explanation presented by the researchers argues that “WOM concerning self-relevant products serves as a means of self-presentation, whereas WOM about utilitarian products does not provide the same social benefits”. This justification is based on the previous findings that claim that individuals often adjust their behavior according to self-presentational goals, in order to convey a more positive self-image to others (e.g., Chen et al., 1996; Fazio and Towels-Schwen, 1999), and that consumers are willing to exaggerate product claims in the interests of self-promotion (Sengupta et al., 2002).

It should also be noted that cultural differences can influence the expression of WOM. In Western cultures, for instance, the individual is seen as an independent and autonomous entity that behaves according to his unique internal attributes (Markus and Kitayama, 1991). Contrarily, some other cultures, like Eastern, take an interdependent view of the individual. As a result, individualist cultures emphasize differentiating oneself from others and personal recognition. Therefore, it is not surprising to see that individualist consumers try to express themselves indirectly by providing more WOM for self-relevant products than for utilitarian products, and exaggerate the benefits of the products they own, in comparison to collectivist cultures; whereas collectivist cultures tend to emphasize the self in relation to others and promote social harmony. Alternatively, collectivist consumers are less likely to
use WOM to gain attention, and they do not distinguish between self-relevant and utilitarian products when giving WOM, as they even feel less motivated to provide it at all (Chung, Darke, 2006). Also, “collectivists may be more likely to develop strong emotional ties to products and services when they are signs of group” (Buttle, 1998).

Furthermore, we live in an era where access to information in the developed world is easy and fast, where we are overwhelmed with large amounts of information lacking the time to investigate and deliberate on all data obtained, and still we are subjected to thousands of advertisements a day. Hence, WOM appears as a time saver that helps dealing with information overload by allowing other people, after collecting and analyzing information and experience of the product/service, to share their experiences and knowledge (Silverman, 2001). “As markets become saturated with information and products, it is increasingly difficult for consumers to know and process all alternatives. (...) In such circumstances, competent advisors, such as market mavens, can help consumers become informed without their engaging in cognitively demanding and time-consuming search activities” (Wiedmann, Walsh e Mitchell, 2001, pg. 196).

Another possible reason for the manifestation of WOM is associated with the theory of cognitive dissonance. Once consumers settle on a brand, a sense of cognitive incongruence may sometimes take place, resulting from the information obtained regarding the rejected brands or from other sources’ messages (for example, recommendations from friends versus advertising). This inconsistency can be reduced through the use of impartial sources of information (such as virtual platforms of opinion) that confirm the assessment or the strength of consumer choice (Sweeney, Hausknecht and Soutar, 2000).

According to Schiffman and Kanuk (1987), WOM is also used to learn about how a product should be consumed and what kind of new products are there on the market. Granitz and Ward (1996) reported that 20% of 204 customer responses in a

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23 The expression “cognitive dissonance” comes from Social Psychology and describes a psychic tension that causes an uncomfortable feeling. It is the perception of a conflict between two different cognitions, where “cognition” is defined as any element of knowledge, including the attitudes, feelings, beliefs or behaviors. This effect was first described in an experiment conducted in the U.S. by Festinger and Carlsmith, in 1959 (Festinger and Carlsmith, 1959).
news group “were devoted to discussions of how to use a product” (pg. 164). Another interpretation from the same author is that consumers seek information about a product in review sites in order to evaluate it and determine its social prestige.

WOM can also have its origin in the human need to share information about common interests: “consumers may be turning to the Internet to not just examine ads and order, but to interact with others who share their “consumer passions”” (Granitz and Ward, 1996, pg. 161). Besides, “when consumers have a preference for a brand, they are more keen and willing to receive information from it and also to search for information about it” (Simmons, 2007, pg. 549).

The demand for information through WOM can still be associated with the perception of risk involved the purchase of a product or service (Arndt, 1967; Cunningham, 1967). The bigger the risk that might be associated with a certain purchase, the more information would be collected.

It can be concluded that there are many reasons that lead to the production and search of word of mouth. However, other reasons should be added to justify the occurrence of promoted WOM, resulting from marketing activities that aim at its occurrence.

There is some evidence that WOM is driven by product/service performance and/or dissatisfaction/satisfaction with the purchasing process (Tanner, 1996; Anderson, 1998). When consumers/clients are satisfied or delighted with a product/service, positive WOM may ensue. On the other hand, when their expectations and perceptions are not successfully achieved, negative WOM may happen. For this reason, one could argue that loyal consumers would be more likely to engage in WOM and to act as brand ambassadors.

However, contrary to what would be expected, according to Bowman and Narayandas (2001) WOM coming from those considered loyal is more likely to be negative, as this group is less likely to become involved in it if their satisfaction is high. That is to say, loyal customers are more likely to engage in negative WOM, when they are dissatisfied compared to positive WOM when they are satisfied,
because satisfaction is the norm and is what caused their loyalty in the first place. Besides, (dis)loyalty has a stronger relationship with negative WOM than does (dis)satisfaction. On the other hand, it was found that satisfaction has a stronger relationship with positive WOM than loyalty (Matos and Rossi, 2008).

Furthermore, considering Maklan and Klaus’s (2011) suggestion in the context of bank services, customer experience could be a better predictor of loyalty and word-of-mouth than customer satisfaction, since it explains those outcomes better.

Moreover, in an attempt to determine whether, and how, a company could successfully market its products through an amplified WOM campaign, by selectively targeting a group of key influencers, Godes and Mayzlin (2004) found that non-loyal, rather than loyal, customers had the biggest incremental impact on sales. They also realized that acquaintances are important to the spread of information due to their peripheral position in a social network.

Similarly, Samson (2010) found that loyal users engaged in significantly less effective WOM (in this case lower attitudinal conversion rates) than non-users. Plus, the frequency of product use only significantly affected the number of WOM conversations. Matos and Rossi (2008) have also found that the influence of loyalty on WOM is significantly lower for studies measuring reported behavior of WOM activity when compared to those measuring intentions of WOM activity.

As Matos and Rossi (2008) stated, this counterintuitive finding could be at least partially explained by Godes and Mayzlin's (2004) reasoning that networks of highly loyal customers are more saturated, leading to less incremental gains from WOM.

- WOM becomes “word of mouse”

In the last few years the Internet has become an important communication vehicle for the diffusion of written WOM, which some started to call “word of mouse” (e.g. Helm, 2000; Gelb, Sundaram, 2002; Xia, Bechwati, 2008), for two main reasons:

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24 In this paper, the terms “word of mouth” and “word of mouse” are analyzed as being complementary and, therefore, represented by the same designation: “word of mouth” (WOM).

First, the number of Internet users increases every day\textsuperscript{26}. Second, with the emergence of the Web 2.0 in approximately 2004, there has been a significant growth of different interactive channels whose purpose is to share information (such as social networking sites, forums, blogs and online communities).

Using the American case as an example, according to a Nielsen’s study conducted in February of 2004, three out of four Americans had access to the Internet\textsuperscript{27}. In 2010, the monthly time spent on the most heavily used Internet sites was 906 million hours, which were spent on social network sites/blogs\textsuperscript{28}, in 2010. A study conducted in May 2009 by Anderson Analytics on social network site activities of US social network users\textsuperscript{29} shows that 46% of the respondents said something good about a brand or a company, while 23% said something bad. Therefore, in those online social platforms, online WOM can be seen as a “\textit{fait accompli}”.

Consumption-related online communities are also online channels in which WOM takes place and where individuals with an interest in a product category interact for information (like purchase advice), connecting with other like-minded individuals, getting social support (with limited social presence, though) and/or participating in complaint or compliment interactions (Hoffman and Novak, 1996; Kozinets, 1999; Cothrel, 2000). These communities are becoming an important supplement to social and consumption behavior (Wellman, Salaff, Dimitrova, Garton, 1996), due to their popular adoption - 84% of Internet users admit having contacted at least one online community (CyberAtlas, 2001).

Should practitioners and academics describe this phenomenon as word of mouth or distinguish it by using different terminology, such as online word of mouth, or even word of mouse? Or, on the other hand, can both phenomena be described with the same term?

While in the traditional instances of “word of mouth”, temporary and ephemeral messages are targeted to one or a few friends in a person-to-person way, in the

\textsuperscript{5} According to the last data (2010-06-30) from the InternetWorldStats.com, from 2000 to 2010 there was a growth of 444.8% of Internet users.

\textsuperscript{27} A penetration of 74.9%.

\textsuperscript{28} Data from Nielsen’s study NetView conducted in June 2010.

\textsuperscript{29} Anderson Analytics, "Social Network Service (SNS) A&U Profiler," provided to eMarketer, July 13, 2009
“word of mouse” case, messages are enduring and visible to the entire world (Duan, Gu, Whinston, 2008). This means that any user can access opinions, recommendations, and experiences concerning goods or services, not only from their personal social network, i.e., family, friends, colleagues, but also from unknown sources (Ratchford, Talukdar and Lee, 2001), protected or not by anonymity or a false identity. This lack of personal contact, anonymity or identity information restriction, and the confidence/trust in confidentiality, encourages the sharing of negative opinions (Gelb, Sundaram, 2002), and may raise doubts about the sources’ credibility.

Regarding doubts about credibility, and according to source credibility theories, source expertise (perceived competence of the source providing information) and source bias (the possible bias/incentives that may be reflected in the source’s information) are key elements that influence the level of credibility attributed to an information source (Eagly, Chaiken, 1993; Perloff, 1993; DeZoort, Hermanson, Houston, 1993). Persuasion, homophily, social tie strength and reputation can also determine the value of information allocated and ultimately the level of source’s credibility (Hass, 1981; Eagley, Chaiken, 1993; Tadelis, 2002). However, in online communities, such as forums or consumption-related communities credibility, identity, homophily, social tie strength, and reputation may be difficult to determine, as opposed to what happens in offline relations, due to the lack of personal/physical contact.

According to the latest research focusing on the social-emotional nature of computer-mediated communication (e.g., Lea and Spears, 1995; Parks and Floyd, 1996; Walther, 1992, 1996; Walther, Anderson, Park, 1994), based on principles of social cognition and interpersonal relationship development from social psychology, it was proposed that, given enough time, individuals can create fully formed impressions of others based solely on the linguistic content of written electronic messages (Brown, Broderick, Lee, 2007). Moreover, for Haythornthwaite (1999) (as quoted in Brown, Broderick, Lee, 2007) despite limited nonverbal cues and the lack of knowledge about individuals’ identities, it is clear that social resources such as emotional support, companionship, and a sense of belonging, are visibly exchanged
online

Consequently, it is suggested that the perceptions of other members’ credibility could be the result of continuing evaluations based on the verbal contributions from those members to the “group” they all belong to, even though they are unknown to each other.

Another difference between word of mouth and word of mouse is that the latter can be made not only by unpaid people, such as “market mavens” or “market ravens”, but also by people paid by companies to promote a specific brand or organization on the Web. In addition, with the “word of mouse” phenomenon the messages are less tailored as they depend on the extent of information revealed by the inquirer, and the format of the messages spread is predictably different, as they can assume the form of a text, video, or image and can easily be spread through different communication technologies. On the contrary, the word of mouth phenomenon occurs among any person, specialized or not, generally in an oral, person-to-person communication (Arndt, 1967).

Despite the fact that “word of mouth” and “word of mouse” differ in some respects, they both aim at the same goals of sharing information or opinions and can thus be viewed as complementary, rather than strictly distinct.

Although they have different characteristics, the two phenomena cannot be easily and simply distinguished, since both realities are connected whenever the access to the digital world is guaranteed. In other words, a message received in an offline environment can be diffused in an online environment, and vice versa. The Internet can only give a partial view of the interpersonal communication involved in WOM

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Kumar and Benbasat (2002, p. 1) have even proposed a new construct of Para-Social Presence, the perceptual illusion of non-mediation, defined as “the extent to which a medium facilitates a sense of understanding, connection, involvement and interaction among participating social entities.”

Feick and Price (1987) coined the term “market mavens” to describe individuals who, more than the average run of the population, volunteer information and opinions to people they know. I will talk more about this type of individuals bellow in this chapter.

A category of opinionated and passionate participants of Internet forums, where they partake with enthusiastic “ravin” about products or rave in anger at a manufacturer, retailer, or brand. Those who post opinions electronically and are disproportionately likely to consider themselves sophisticated evaluators (like the “market mavens”), but also are apt to have strong opinions. In fact, those opinions are so strong that these “market ravens” take the initiative to spread the word about purchases to people they will never meet (Gelb, Sundaram, 2002).
because WOM is not restricted to the online environment, as it is also influenced by offline interactions. Therefore, both types of WOM can walk hand-in-hand. They are not substitutable, but complementary.

Considering these last arguments, as well as the similar impacts that online and offline word of mouth have, recommends that both phenomena be described as simply “word of mouth”. However a the redefinition of word of mouth is also required due to the impact of the increasing use of online social platforms and the existence of WOM in such environments. These new factors make some established definitions unsuitable, such as those proposed by Stern (1994) and Halstead (2002), which neglect to include written messages, the online environment, the non-ephemeral effect of written WOM, and the possibility that WOM can be stimulated by an organizational information source to unknown contacts. The absences of these factors justifies the need for a generalized definition, capable of capturing the whole WOM phenomenon (e.g. Godes et al., 2005).

In line with the presented review, and in an attempt to contribute to the theoretical construction of the definition, it is suggested here that word of mouth should be described as an oral or written communication process, between a sender and an individual or group of receivers, via any communication method (oral/face to face, telephone), written (paper, email, text message), electronic (internet forum, social media) etc.), regardless if they share the same social network, with the purpose of sharing and acquiring information, on an informal bases. Therefore, WOM is applicable both to offline and online environments, and in the contexts of business to consumer (B2C) and business to business (B2B), between at least one sender and one receiver in order to provide and/or exchange solicited or unsolicited opinions, perceptions or facts about brands or companies, goods or services. This exchange will potentially affect the evaluation, and the subsequent decision making, of the receiver in relation to the subject of conversation.

On account of the development of new communication technologies and the appearance of the Web 2.0, WOM is no longer restricted to two actors, since it can take place involving more people. That is to say, WOM can start as an interpersonal communication of two actors and end up with more participants that share the same
interest. These scenarios and the relation between the actors in the process of WOM can assume different formats, such as: pre-consumer/client(s) to post-consumer/client(s); post-consumer/client(s) to pre-consumer/client(s); pre-consumer/client(s) to pre-consumer/client(s); and post-consumer/client(s) to post-consumer/client(s).

The relation between these actors (particularly on online social platforms) can be intra or inter social network, which means that the WOM process can arise between participants that do not necessarily belong to the same social network, but are connected by the same interests (e.g. the online social network “Pinterest”). As a result, the dispersion of a message can more easily extend to a higher number of members from different groups in a short period, again thanks to the new technologies.

Even though WOM can occur between unknown participants, the traditional informal character of this phenomenon does not disappear, since the familiarity or the proximity tone remains. This situation leads to a possible conflict of knowing how much trust can be assigned to the message or the sender. Thus, it would be interesting to compare in future research the credibility attributed to WOM from known and unknown sources, in offline and online environments.

As the reach of WOM has been broadened with the new communication technologies, a new interest in re-examining the effect of WOM in the digital age has arisen (Zufryden, 2000; Dellarocas, 2003; Chen and Xie, 2008; Senecal and Nantel, 2004; Forrester, 2005), especially because the Internet offers possibilities of tracking online interactions and, therefore, of better understanding the phenomenon. Yet, one should not forget that the Internet can only give a partial view of the interpersonal communication: WOM is not restricted to the online environment, as it is also influenced by offline interactions.

As to whether online articulations have impact on buying behavior and communication behavior, as offline WOM do, the study of Chevalier and Mayzlin (2006) is quite enlightening. These two researchers studied the relation between WOM valence and sales in the Amazon.com and BarnesandNoble.com online stores. For that purpose, they used the book reviews posted by customers as a proxy for
WOM. Their conclusions show that when reviews were positive there was an increase of sales. In turn, when they were negative, sales dropped off. They also found that the impact of a negative review was greater than the impact of a positive one. However, it should be note that we cannot be sure if this correlation between reviews and sales has not been also affected by the impact of the product per se (in this case, the analyzed books). Further research that could clarify this doubt is recommended.

These findings are in accordance with the results of Hennig-Thurau and Walsh (2004), which claim that people will buy a recommended product, or will refrain from buying a negatively evaluated product, after reading online articulations. It also underlines that this influence affects both online and offline purchasing: “as for communication behavior, it seems plausible that reading online comments will cause a change in the reader’s word-of-mouth communication with other consumers (e.g., friends, colleagues or relatives) about the respective product because of the trustworthiness attributed to other consumers’ online articulations, due to the concept’s similarity to traditional word of mouth” (Hennig-Thurau and Walsh, 2004, pg. 61).

- The influencers of the power of WOM

Much can be said from past research about how WOM influences opinions and, ultimately, decisions. When analyzing its influence, different aspects should be considered such as valence, volume, dispersion, vividness, usefulness and types of sources.

Foremost, in order for WOM to arise, an important factor has to take place: awareness, which is the primary effect of the positive feedback mechanism (Duan, Gu, Whinston, 2008) and the first step in the consumer decision-making process (Lilien, Kotler, and Moorthy 1992). WOM depends on and leads to awareness, which has influence on consumer evaluation of products/services and their ultimate purchase decisions (Duan, Gu, Whinston, 2008).

The consolidated power of WOM, and the reason for the increasing interest in it
from the marketing industry, is owed to the proven relation between WOM and sales. Indeed, studies confirm that there is a positive relation between these two variables (Godes and Mayzlin 2004; Srinivasan, Anderson, and Ponnavolu 2002): highly positive WOM may lead to more sales, and negative WOM may result in no sales.

Concerning the valence factor, WOM has different impacts whether it is positive, negative, mixed, or neutral. Positive WOM is cognitive/rational in nature, often associated with the quality of the service (Sweeney et al., 2005) and it is distributed out of altruism and self-enhancement (Sundaram, Mitra and Webster, 1998). Negative WOM is defined as interpersonal communication that denigrates the object of the communication (Weinberger, Allen and Dillon, 1981; Richins, 1984). It tends to be emotional, being associated with dissatisfaction. Consumers distribute negative WOM out of anxiety reduction and vengeance (Sundaram, Mitra, and Webster 1998). When comparing these two types of WOM, it is known that “negative WOM about a brand has a larger absolute effect on consumer purchase intentions than positive WOM, but positive WOM has a larger positive effect on WOM retransmission than the positive effect of negative WOM” (Baker, 2011). Put differently, negative WOM has a stronger influence on customers’ brand evaluations and purchase decisions than positive WOM, whereas positive WOM has more impact on the spread of information about the brand, product or service (Arndt, 1967; Wright, 1974; Mizerski, 1982). Additionally, some studies found that negative WOM is considered to be almost twice as likely to influence a receiver’s opinion about a product (e.g., Arndt, 1967; Mizerski, 1982; Laczniak et al., 2001; Yang and Mai, 2010). Other studies, however, find the opposite (e.g., Skowronska and Carlson, 1987, 1989; Gershoff et al., 2003).

Another relevant aspect is that consumers do not give equal weights to positive and negative product reviews (Zhang, Craciun, Shin, 2010), as the consumption goals bias consumers' evaluations of product reviews. For instance, consumers who evaluate products associated with promotion consumption goals (e.g., photo-editing software used to create ideal pictures) perceive positive reviews to be more persuasive than negative ones (i.e., a positivity bias). Conversely, consumers who evaluate products
associated with prevention consumption goals (e.g., anti-virus software used to avoid a computer crash) perceive negative reviews to be more persuasive than positive ones (i.e., a negativity bias).

It should be noticed that the majority of WOM valence analysis has been focused on positive and negative content. It might be interesting to develop further research that could determine the impact of mixed and neutral WOM, so the results could, subsequently, be compared with the previously mentioned valence types.

Volume is another dimension of WOM that has been measured by many scholars (Richins, 1983; Reingen and Kernan, 1986; Anderson, 1998; Bowman and Narayandas, 2001; Van den Bulte and Lilien, 2001; the Yahoo! Buzz Index). Some researchers believe that the explanatory power of WOM comes, not from valence, but from volume (Liu, 2006), and, although WOM volume and valence have effects on sales, this influence seems to be unequal (Chen, Wu, and Yoon 2004; Liu 2006): “while WOM valence does not directly affect revenue, higher WOM valence indirectly increases box office revenue by generating higher volume of WOM”. Nonetheless, “increases in WOM valence could lead to higher sales but higher sales are not likely to lead to even higher WOM valence” (Duan, Gu, Whinston, 2008, pg. 235 and 241).

While considering volume answers the question: “how often are people talking about the product?”, dispersion attempts to tackle the question “how many different people are talking about it?” Dispersion is also an important construct to measure WOM power/influence suggested by Godes and Mayzlin (2004). They describe it as “the extent to which conversations about the product are taking place across a broad range of communities” (pg. 2). These researchers found that higher WOM dispersion is related to higher future sales (surprisingly, they found that volume is not consistently associated with higher future sales), supporting the assumption that the more people will be informed about something, the more dispersed the information is between communities, and that the impact of dispersion declines over time. Still considering the dispersion factor, Leskovec, Adamic and Huberman (2006) found, in a large-scale study on the effectiveness of WOM, that most product recommendation chains terminate after one or two steps.
As mentioned by Godes and Mayzlin (2004), future research is required in order to thoroughly comprehend the dispersion factor, its bases for the calculation and to identify the underlying category factors that make it more important than volume.

Moreover, Chunling and Xu (2010) suggest two other key facets of analyzing the power of WOM: vividness and usefulness. The vividness of the message is reflected in its depth, intensity and richness. It entails the manner and the body language, such as eye contact, through which the message was conveyed, rather than its content, and reflects the strength of the intention of the recommendation. Unfortunately, the vividness factor has a limited application when WOM is produced online. The usefulness of the message is related to content aspects, such as the language used.

WOM usually occurs through sources that consumers consider more credible than information received through commercial sources (Herr, Kardes and Kim, 1991). The explanation lies in the fact that those sources are perceived as independent, with no interest in getting profit by sharing information. A conclusion that supports this allegation is that WOM is believed to be seven times more effective than print advertising in influencing consumers to switch brands (Katz and Lazarsfeld, 1955 in Trusov, Bucklin, Pauwels, 2007). Besides, “WOM referrals have longer carryover effects and produce higher response elasticities in comparison to the traditional marketing actions” (Trusov, Bucklin, Pauwels, 2008, pg. 91). Plus, “WOM has a much stronger impact on new customer acquisition than traditional forms of marketing” (Trusov, Bucklin, Pauwels, 2009, pg. 6). And, WOM “not only influences new customer acquisition but is itself affected by the number of new customers” (Trusov, Bucklin, Pauwels, 2007, pg. 5). As a result, the most powerful selling of products and ideas takes place not marketer to consumer but consumer to consumer (Gladwell, 2000).

Other factors should also be considered when analyzing the influence of WOM, like the dimension/power of the brand or organization. Brands with higher levels of equity tend to reap greater benefits from WOM. In fact, the production of WOM originated on weak social ties motivates higher levels of information search than when the targeted brands have weak equity (Baker, 2011). Speaking about social
network influence, it has been proven that “WOM between stronger social ties tends to have greater impact on brand-related responses than WOM between weak ties, except in the case of motivating additional information search” (Baker, 2011).

According to the social consequences of interpersonal influence model, created by Carl and Duck (2004), everyday communication routines create and sustain social and personal relationships (also contributing to their deterioration). These relations not only support communication processes, but are also pervasively rhetorical, due to their subtle influence on how people make sense of their world, their place in it and the rightness of their worldviews (Duck, Pond, 1989). Therefore, in order to fully understand the WOM phenomenon (and the influence of relationships) the model suggests that WOM should be analyzed in terms of everyday communication practices.

As an example, it has been shown (Carl, 2006) that more established relationships (best friends, friends, relatives and romantic partners and/or spouses) have the highest percentages of interactions involving WOM episodes, and that life and/or living was the most frequently cited category for interactions involving WOM episodes. These relationship interactions, and WOM episodes, also vary according to the day of the week. For example, friends had the highest number of WOM episodes across all days of the week. Romantic partners and/or spouses had a higher number of interactions and WOM episodes on Fridays, Saturdays and Sundays than on all other days. Acquaintance interaction is lowest on the weekends but builds on Mondays and hits its peak on Tuesdays. The results, though, should not be generalized without considering cultural influences.

Nevertheless, as mentioned by Carl (2006), so far the existing research on WOM has not considered the phenomenon in a context of everyday communication and relationships, that is, in a holistic way. This could be problematic because WOM takes place in the context of everyday, relational interactions (Arndt, 1967; Carl, 2006) and this context should be considered when analyzing the different impacts of the phenomenon in order to assess its impact.

To sum up, it could be said that WOM is a much-analyzed phenomenon, although not yet fully understood. It is certain, however, that its (proven) influence depends
on three important aspects, and so not all WOM is equal: the receiver’s involvement in the communication, the communicator’s credibility, and the existing type of relationship between the two parts. In other words, WOM takes place in a context of everyday, relational interactions (Arndt, 1967; Carl, 2006) and this context should be considered when analyzing the different impacts of the phenomenon.

- WOM in the marketing industry

Since the impact of WOM on sales was confirmed, either through its influence on consumers’ opinions and by providing a new venue for retailers to reach consumers, overcoming their resistance with lower costs and fast delivery, it has been proposed by some researchers that businesses should embrace and facilitate WOM activities (Rosen, 2000; Godes and Mayzlin 2004, Liu, 2006; Duan, Gu and Whinston, 2008).

In-deed, marketing programs that provide incentive for or facilitate positive WOM diffusion can largely benefit companies (Rosen, 2000; Godes and Mayzlin 2004, Liu, 2006; Duan, Gu and Whinston, 2008).

As a result, several types of WOM marketing activities have been employed in the last few years. The major categories include the following:

1) Viral Marketing – the main goal is to create entertaining or informative content designed to be passed on by each receiver, usually electronically;

2) Referral Programs – the purpose is to create tools that enable satisfied customers to refer their family and friends about a brand, product or service;

3) Community Marketing – the intention is to form or support the creation of niche communities that are likely to share interests about a specific brand or organization (such as user groups, fan clubs and discussion forums) and then, support these groups by supplying them with tools, content and information (Trusov, Bucklin, Pauwels, 2009).

However, the costs of these marketing activities are inevitable and the quantifying of their effectiveness remains a challenge (e.g., Godes et al. 2005 in Trusov, Bucklin, Pauwels, 2009). As mentioned by Gelb and Sundaram “the great challenge lies in
motivating authentic, happy customers to provide accurate and helpful information to those seeking it” (2002).

The advent of new communication technologies and the rise of social software’s such as online communities, social network sites, and blogs, made the share of knowledge to a vast number of receptors easier. One study by Pew Research (2011) found that almost seventy-nine percent of American adults use the web and Anderson Analytics estimated that 110 million Americans had used an online social network within the past month (Bulik, 2009). As a result the influence of an Internet user is no longer confined to his social network or to face-to-face contacts.

These facts have contributed to the increased importance of WOM communication in consumer choice and to the need of understanding who are the influential people that share information and how can a company take advantage of their willingness of spreading information.

- Organic and “fertilized” WOM

The increasing embrace of WOM activities by companies has led to the question of whether “fertilized” or “inorganic” WOM has the same value/impact as, for instance, spontaneous positive or neutral WOM.

Both concepts describe a phenomenon that aims at the spread of information and, deliberately or not, the influence of receiver’s opinions or behaviors. Despite these similarities, however, the origins and expectations of both concepts are quite different.

From the sender’s point of view, in the “organic” WOM, information is delivered to the receiver with the unconscious attempt to benefit their personal image or to get social-benefits (especially in individualistic cultures). In other words, there is an intra-personal encouragement to share information and this information supplying could or could not have been solicited by the receiver. On the other hand, in the so-called “fertilized” WOM, the sender is encouraged by a third actor (producer/owner of the message, i.e., a brand or organization) to spread a message through his social network, or to make referrals, and in exchange receive benefits from this third actor.
Sometimes the information is passed without the receiver’s solicitation. If there were not an incentive, most probably the sender wouldn’t have sent the message.

In the event that the receiver perceives that the sender is to benefit by a third actor from the WOM process, the sender’s credibility may be jeopardized, and the way that specific content is perceived may be affected. Bear in mind that in the definition of credibility lays the idea of trust, which can be described as “the ability to reliably predict the actions of the other party in the relationship and the belief that the other partner will not act opportunistically if given the chance to do so” (Jap and Weitz, 1995, pg. 2). Plus, considering the description of advertising proposed by Kotler’s as “one of several influences on a person’s behavior and probably less important – because it is known to be self-serving – than such influences as peers and personal observation” (1967, pg. 456), it is then worthwhile to question if there are relevant differences between the results of “fertilized” WOM and advertising.

When the stimulus of the sender to produce “fertilized” WOM can not only be perceived by the receiver, but also be extended to him, becoming the new sender of the same message (e.g., contests), the effectiveness of the message (and even the campaign) is expected to be determined by the capability of the benefits to cover his needs. Nevertheless, previous studies show that it should be stressed that a customer that receives economic incentives to read on-line articulations is less likely to talk to other customers about the content (Hennig-Thurau, Gwinner, Walsh and Gremler, 2004), economic (i.e., extrinsic) incentives can even “destroy” a reader’s actual interest in the content of on-line comments (Frey, 1997).

On the other hand, when the benefits of “inorganic” WOM are not extended to the receiver, the type and the strength of a tie (whether it is a weak or a strong social tie) between a sender and a receiver may be a determinant factor of message effectiveness, even though the receiver perceives that the sender is being benefited with the flow of information.

This conclusion is based on the proven fact that “WOM between stronger social ties tends to have greater impact on brand-related responses than WOM between weak ties, except in the case of motivating additional information search” (Baker, 2011). Besides, social network theorists believe that individual, group, and organizational
behavior is more affected by the kinds of ties and networks in which actors are involved than by the individual attributes of the actors themselves (Haythornthwaite, 1999).

This determination once again stresses the importance of understanding the type of relations or ties strength between the participants of the WOM process (Knoke, Kuklinski, 1982; Brown, Reingen, 1987).

Marketers should not only be concerned by the fact that organic WOM and fertilized WOM are not stimulated equally and perceived in the same way by receivers, leading to different impacts, but also understand that communal WOM does not solely increase or amplify marketing messages. Rather, these marketing messages and meanings are altered in the process of embedding them (Kozinets, de Valck, Wojnicki, and Wilner, 2010).

This fact shows the importance of establishing a personalized relationship between marketer and target of the message. By adapting marketing messages into social narratives, WOM marketing targets attempt to emphasize their credibility as independent sources of information, while also conforming the messages to the norms and expectations of the receivers (Kozinets, de Valck, Wojnicki, and Wilner, 2010). This network coproduction, where consumers also become co-producers, is indispensable for the success of any WOM marketing campaign.

The downside of this new scenario is the loss of control over what is said and spread about a brand, product, or service. If consumers with no commercial motivations become producers of commercial messages, both positive and negative reviews coinciding with their opinions are to be expected. Nevertheless, this loss of information control can also be an advantage for marketers as it raises the credibility of the message. In other words, a message from a perceived independent source, adapted to the norms of the community, have better chances of being accepted by the receivers. Viral marketing techniques may also be useful to promote new products (Anderson, Ling, 2008) and to benefit from peer or social influence.

To sum up, WOM marketing is a complex phenomenon, within which marketers should consider the incentives and the cultural demands important for each possible
WOM diffuser target. Moreover, marketers should also bear in mind that consumers engaged in WOM activities most probably will not simply share a commercial message without changing it, and for this reason one can state that this is the beginning of a new age of network coproduction between brands and consumers. Finally, marketers should also consider the existence of a saturation point for recommendations given to a person after which additional recommendations seem to have negative effects (Leskovec et al., 2006).
Chapter III – Empirical Research

3.1. STUDY 1 – Brand equity assessment

As has been shown in chapter 2.2., many marketing managers, influenced by the growing number of adopters from different parts of the world, have invested crescent shares of their communication budgets on social network sites (SNS), specifically to maintain their profile web pages and to publish paid advertisements. Yet, little is known about the effectiveness of their participation on these social interaction websites and its impact on the relation with their consumers. In other words, does brands participation on SNS positively impact their equity?

From an academic point of view, although Aaker (1991) and Keller (1993) are among the most quoted academics in brand equity measurement analysis, they only conceptualized brand equity, and have not operationalized a scale for its measurement. From an industrial perspective, according to research conducted by Ittner and Larcker (2003), at least 70 per cent of organizations employ metrics to assess brand equity that lack statistical validity.

For these reasons, the present work aims to suggest a scale for measuring customer-based brand equity and apply that scale to assess how differently brands are perceived when consumers are exposed to their participation on SNS and when they are not.

After being defined and statistically validated, the proposed measurement scale will be used to test two designed hypotheses for the research question. The findings are discussed and followed by the identification of research limitations, future research directions, conclusions and their implications.

3.1.1. Problem Definition

- Definition of the hypothesis

Due to difficulties involved in comparing the equity results of a brand before and after using a specific SNS, this study assesses how differently brand consumers that follow a brand’s activity on a SNS perceive the equity of the brand in comparison to
consumers that do not follow it.

The SNS chosen was Facebook and three groups of consumers were identified: consumers that follow the brand on Facebook, consumers that use Facebook but do not follow the brand, and consumers that do not use Facebook.

It is hypothesized that consumers that follow a brand on Facebook are more informed about the brand and its products, which in turn will contribute not only to brand awareness, but also to higher engagement levels. Moreover, by engaging with a brand in a context other than consumption, it is suggested that consumers are more likely to establish a close relationship with the brand, which will impact judgments about the brand, performance perception, feelings toward the brand, and ultimately brand loyalty and recommendation propensity.

Therefore, the following hypothesis is presented:

**Hypothesis 1:** the brand equity from consumers that follow the brand on Facebook is better than the brand equity from those who don’t.

### 3.1.2. Methodology

The present survey was developed with the goal of being a simple, valid and parsimonious paper-and-pencil measurement scale (not involving complex statistical modeling) of consumer-based brand equity (CBBE) through its constituent dimensions. The questionnaire survey was chosen as the main data collection instrument, since this method enables researchers to examine and explain relationships between constructs, in particular cause-and-effect relationships (Saunders *et al.*, 2007). This survey is statistically validated, allowing its use in future academic research and commercial purposes, besides being applicable on various product fields, from business-to-business to consumption market, since the items that compose the scale aim to measure consumer perceptions at an abstract level (not specifically to a product and industry-class) and at an individual level. Finally, the suggested constructs drawn on theoretical dimensions as was shown in chapter xx from this work, allowing the researcher to assess which areas and sub-areas need to be improved or not.
The following diagram represents the process of data generation and survey validation followed in this study:

![Diagram](image)

Figure 9: The procedural step of the present study.

In order to achieve a cultural validation of the proposed scale, the results of two independent groups from different cultures were compared. Specifically, two popular brands in Portugal and United States of America from the same category: Coca-Cola and Pepsi.

These brands belong to two American multinational companies who have different strategies, for an almost equal notoriety. Based on Interbrand’s best global brand list of 2012, Coca-Cola was the world’s most valuable brand. On the other hand, Pepsi, product of PepsiCo, the Coca-Cola company’s main rival in the soft drink industry, is usually second to Coke in sales (as it happens in 2012\(^3\)). According to Beverage

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\(^3\) In *Beverage Digest*, March 25, 2013.
Digest’s 2008 report on carbonated soft drinks, PepsiCo’s U.S. market share was 30.8 percent, while Coca-Cola Company’s was 42.7 percent.34

- Constructs and items generation

The constructs suggested to study customer-based brand equity were chosen based on the proposed brand equity model in chapter 2.1, which in turn has its roots on previous work from Aaker and Joachimsthaler’s (2000), and Keller’s (2003) customer-based brand equity model.

The four constructs considered are: brand awareness, brand image, brand loyalty and brand relationship. The brand awareness construct aims to evaluate the extent to which the brand is known by consumers. Brand image assesses the strength of associations and judgments related to the brand. Brand loyalty aims to qualitatively identify the loyalty degree of the consumer. This type of approach was chosen due to the belief that quantitative analysis are insufficient in determining and explaining the true reasons why a consumer chose to be loyal to a brand, and only have the ability to express the quantitative value of the consumption behavior. Finally, brand relationship is reflected through the items related with attachment, engagement and advocation, with the purpose of determining the level of relationship of consumers with the brand. Further explanations for the adoption of each construct can be found in the Part I, chapter 2.1., of this work.

Different items allowing the possibility to measure each construct compose the proposed customer-based brand equity scale. Specifically, two items deconstruct the brand awareness construct; brand image has fifteen items based on the categories of performance, imagery, judgments and feelings; brand loyalty has four items; and brand relationship has eleven items based on attachment, engagement, and advocation. Regarding this last construct, three items are specific to the context of the brand’s participation on the social network site Facebook, and were included to better answer the main research question of this work, that is, to understand if there

34 “Special Issue: Top-10 CSD Results for 2008”, Beverage Digest, March 30, 2009.
is a significant brand equity difference among the consumers of the two mentioned beverage drinks that use Facebook and follow the brands, those that do not follow, and those consumers that do not use Facebook. The items are: *I add "likes" on the brand’s Facebook page; I add comments on the brand’s Facebook page; I share brand’s posts on my Facebook page.* Since these items are capable of measuring the levels of attachment and advocativeness towards a brand, they were included in the reliability assessment and scale purification. However, they can be easily substitute by others not specific to a determined context.

Table 2: Scale constructs and items.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Awareness</td>
<td>a) What brands of flavored non-alcoholic drinks can you think of?</td>
</tr>
<tr>
<td></td>
<td>b) Do you know this brand?</td>
</tr>
<tr>
<td>Brand Image</td>
<td>c) I consider this brand as a relevant option whenever I’m thirsty</td>
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<tr>
<td></td>
<td>d) I like the look, design of the brand</td>
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<td></td>
<td>e) Compared with other brands in the same category, I like the price</td>
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<tr>
<td>Imagery</td>
<td>f) The brand is social responsible</td>
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<tr>
<td></td>
<td>g) The brand brings me good memories</td>
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<tr>
<td></td>
<td>h) People I admire and respect use this brand</td>
</tr>
<tr>
<td>Judgments</td>
<td>i) I like the taste/quality of the brand</td>
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<tr>
<td></td>
<td>j) The brand is better than other products of the same category</td>
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<tr>
<td></td>
<td>k) The brand takes my interests in mind</td>
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<tr>
<td></td>
<td>l) The brand is unique</td>
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<td></td>
<td>m) I am satisfied with the brand</td>
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<td></td>
<td>n) I trust this brand</td>
</tr>
<tr>
<td>Feelings</td>
<td>o) I like the brand</td>
</tr>
<tr>
<td></td>
<td>p) The brand gives me the feeling of social approval</td>
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<tr>
<td>Loyalty</td>
<td>q) The brand gives me the feeling of security – no risks associated with consumption</td>
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</tr>
<tr>
<td>r) I frequently consume this drink</td>
<td></td>
</tr>
<tr>
<td>s) If I don’t find this brand, I consume other similar soft drink</td>
<td></td>
</tr>
<tr>
<td>t) If I don’t find this brand, I consume very different soft drink</td>
<td></td>
</tr>
<tr>
<td>u) If I don’t find this brand, I’ll go to another place to buy it</td>
<td></td>
</tr>
<tr>
<td>Brand Relationship Attachment</td>
<td>v) I’m proud to have others know I use this brand</td>
</tr>
<tr>
<td>w) The brand is more than a product to me</td>
<td></td>
</tr>
<tr>
<td>x) I indentify with the brand</td>
<td></td>
</tr>
<tr>
<td>y) I feel strongly connected with others who use this brand</td>
<td></td>
</tr>
<tr>
<td>Engagement</td>
<td>z) I’m always interested in learning more about this brand</td>
</tr>
<tr>
<td>aa) I add “likes” on the brand’s Facebook page</td>
<td></td>
</tr>
<tr>
<td>bb) I add comments on the brand’s Facebook page</td>
<td></td>
</tr>
<tr>
<td>Advocation</td>
<td>cc) I would recommend the brand to others</td>
</tr>
<tr>
<td>dd) I talk about this brand to others in my person-to-person contacts</td>
<td></td>
</tr>
<tr>
<td>ee) I talk about this brand to others in my online interactions</td>
<td></td>
</tr>
<tr>
<td>ff) I share the brand’s posts on my Facebook page</td>
<td></td>
</tr>
</tbody>
</table>

- Translation

Since Portugal and the USA do not share the same language, it was necessary to translate the questions from Portuguese to English. In international research, translation is extremely important, especially if the questions are to have the identical meaning to all participants (Saunders et al. 2007).

Parallel translation, also known as committee translation, has been advocated as a preferred method for achieving equivalence in meaning (Hambleton 1993). This type of translation involves several translators who make independent translations of the same questionnaire (Brislin, 1980; Schoua-Glusberg, 1992; Acquadro et al., 1996; Guillemin et al., 1993), and for this reason, it is know for being fairly laborious, time
and cost intensive. However, considering its pros, it was chosen for this research. Therefore two independent translators were asked to translate the same questionnaire and afterwards two native speakers of the target language validated the content. Amendments were made in accordance to the feedback and suggestions received.

- Sampling

Sampling refers to “the selection of a fraction of the total number of units of interest to decision makers for the ultimate purpose of being able to draw general conclusions about the entire body of units” (Parasuraman et al. 2004, pg. 356). The main reason for doing a sampling is when, for some reason (such as time, financial constraints, population size), it is not possible to survey the entire population. Therefore, the three main advantages of sampling are: the lower cost, the fast data collection, and since the data set is smaller it is possible to ensure homogeneity and to improve the accuracy and quality of the data.

In this particular study, the aim is to study the behaviors of students from two different cultures. The samples chosen were undergraduate and graduate students from a Portuguese and an American university (a convenience sample), due to the fact that it is a fast, inexpensive, and easy sampling technique.

In Portugal, a total of 4740 students received the online survey, and 451 volunteers completed it successfully, providing a response rate of 9.5 percent. While in the USA a total of 363 students answered the survey through the Behavioral Research Lab webpage from Columbia University. Their participation was incentivized by the possibility of winning a 30 dollar Amazon gift card in a raffle.

- Reliability Assessment and Scale Purification

In order to generalize the results and the application of the same methodology (survey) to different samples with the same profile, validation and reliability become crucial factors (Freitas et al., 1998a, b; Straub, 1989). As a result, the content was
validated and the reliability of the survey was assessed using statistical methods. Content validity evidence if the content of each item instrument assesses the topic proposed. The reliability coefficient is an indicator of the accuracy of the results observed in the sense of the degree of confidence and is estimated by empirical procedures (Brown, 2002).

- Content Validation

In order to obtain content validation, a pre-test, reviewed and validated by two academic experts on branding and research methodology, was administered to 30 students from the New University of Lisbon and Columbia University, representatives of the target of this research. Since the survey was to be distributed online, the pretest was conducted using the same method.

In the pre-test sample all aspects of the questionnaire concerning the content, wording, sequence, form and layout, question difficulty, and instructions were asked about.

The overall results from the pre-test show that the question content, wording, sequence, form and the layout were scored as good, and the questions were clear and simple, attesting to the content validation of the survey in both languages. However, in the American sample the results also stressed the importance to identify in detail what kind of drink was being measured, for instance, if it was the classic Coca-Cola and Pepsi drinks or a variation of them (Coke Zero, Diet Pepsi, etc.).

The final survey starts with an introduction and an opening question (interesting, simple, and nonthreatening) that introduces the topic and attempts to gain the cooperation of the respondents. Possibly difficult, sensitive, or complex questions were placed late in the sequence. The words used in the survey were also chosen carefully, giving preference to ordinary, non-technical words.
- Reliability Assessment

In this survey an open question (that was treated as a no/yes question), a polar question (no/yes), and a five point Likert scale (1 – strongly disagree; 5 - strongly agree) were used to capture the respondents’ answers.

To determine the internal consistency of the scale as an estimate of its reliability, in other words, the consistency with which a particular set of items of a given measure estimated latent construct or dimension, the coefficient of alpha for the five-point Likert questions and a K20 (a special case of Cronbach’s Alpha) to the polar question were used.

This technique, based on the covariance between items, predicts the total or partial understanding of the respondents to the items of the instrument, since there is a possibility that before a statement the subjects have different opinions, or even that the items have high variability in responses. This technique is used not because they are confused, or even generate different interpretations, but because participants have different opinions for each questions. This problem is called internal consistency and one of the main tests that measure this parameter is Cronbach’s alpha (Anastasi 1977; Brown, 2002; Santos, 1999).

Therefore, the Cronbach’s coefficient estimates the internal consistency of a set of items and the alpha varies from 0 to 1. The higher the count, the greater the reliability of the scale. A value of at least 0.7 reflects an acceptable reliability (Nunnaly, 1978).

The study 1 (applied to the Portuguese sample) was the first one to be applied and it was used to test the proposed scale reliability and to do the necessary amendments according to its results.

Overall Reliability Statistics of Study 1

After individually analyzing the Cronbach’s Alpha results of each proposed construct, the items “if I don’t find this brand, I consume other similar soft drink” and “If I don’t find this brand, I consume other different soft drink“ were removed, because it was
affecting the reliability result and the answer to this question could be assessed through the other items in the same construct group.

Table 3: Cronbach’s alpha results.

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s alpha before deleting item “s” and “t”</th>
<th>Cronbach’s alpha after deleting item “s” and “t”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cronbach’s Alpha</td>
<td>N of Items</td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>.916</td>
<td>33</td>
</tr>
<tr>
<td>Pepsi</td>
<td>.893</td>
<td>33</td>
</tr>
</tbody>
</table>

As can be seen in table 3 the results from the study 1 shows that the coefficients reflect on acceptable reliability (0.930 in the Coca-Cola study and 0.908 in the Pepsi study), establishing the understanding and considering the variability of items relevant to be interpretable (table 4).

Table 4: Reliability Statistics of each construct applied to study 1.

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brand Awareness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>.043</td>
<td>2</td>
</tr>
<tr>
<td>Pepsi</td>
<td>.003</td>
<td>2</td>
</tr>
<tr>
<td><strong>Brand Image</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>.890</td>
<td>15</td>
</tr>
<tr>
<td>Pepsi</td>
<td>.862</td>
<td>15</td>
</tr>
<tr>
<td><strong>Brand Loyalty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>.382</td>
<td>2</td>
</tr>
<tr>
<td>Pepsi</td>
<td>.289</td>
<td>2</td>
</tr>
<tr>
<td><strong>Brand Relationship</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>.892</td>
<td>11</td>
</tr>
<tr>
<td>Pepsi</td>
<td>.875</td>
<td>11</td>
</tr>
</tbody>
</table>

The low reliability results from brand awareness can be explained by the very small
variance of answers obtained (Appendix), since the Cronbach alpha is a ratio between two variances: true core and total score. As to brand loyalty, the small number of questions can explain the low result.

3.1.3. Results and findings

The participants’ answers were separated into three groups: the consumers that use the social network site Facebook and follow the analyzed brands on this platform; the consumers that use Facebook but do not follow the analyzed brands on this platform; and the consumers that do not use Facebook. All the answers of non-consumers of both analyzed brands were excluded.

Hypothesis Tests

In order to test the proposed hypotheses the following qualitative and quantitative analysis of the collected data were performed:

- Qualitative Analysis:

Study 1 – Portuguese sample

Coca-Cola consumers:

Brand Awareness: Brand awareness results, particularly the brand notoriety levels, were positive in the three groups, confirming the popularity of the brand among the selected target.

Brand Image: When questioned about the performance of the brand, consumers that follow Coca-Cola on Facebook did not have a strong opinion (neither agreed nor disagreed) if the brand is a relevant option whenever they are thirsty, while the two other groups strongly disagreed. On the other hand, the three groups assumed liking the look and design of the brand, and to be somehow indifferent (neither agreed nor disagreed) about the price (except brand followers that agreed).
Furthermore, the group of consumers that follow the brand on Facebook neither agreed nor disagreed (as well as the other two groups) that the brand is socially responsible, strongly agreed that it brings good memories, and they neither agreed nor disagreed if people they admire and respect use this brand. The group of non-followers agreed with the fact that the brand brings good memories and neither agreed nor disagreed with the rest of the topics. As for non-users, they strongly disagree that people they admire and respect use this brand and neither disagreed nor agreed if the brand is socially responsible and if it brings good memories.

In addition, the three groups strongly agreed that the brand is better than other products of the same category. Facebook users (agreed) and non-followers (strongly agreed) are more convinced that the brand is unique, than non-Facebook users. Even though all groups are strongly satisfied with the brand, brand followers and non-Facebook users agreed to trust the brand and recommend it. However, only brand followers consider that the brand takes their interest in mind. Besides, this group seems to like the taste/quality of the brand more than the other two groups. Each of the three groups has negative opinions (although with different intensity) regarding whether the brand gives them the feeling of social approval and security.

**Brand Loyalty:** All groups responded that they would not go to a difference place just to have the drink if they do not find the brand. As for consumption behavioral results, Facebook followers of the brand are the one who most frequently consume the brand.

**Brand Relationship:** Although the three groups like the brand (brand followers strongly agreed), they do not feel proud to have others know they consume it, nor do they feel strongly connected with others who consume it too (brand followers disagreed and the rest strongly disagreed). Only Facebook followers identify themselves with the brand, and any of the three groups agreed on the fact that they are always interested in learning more about the brand, which suggests low levels of attachment.
Concerning the relation with the brand on Facebook, both consumers that follow the brand and those that do not show no interest to add comments on the brand’s Facebook page, to share brand’s posts on their private Facebook page, or even likes (Facebook followers disagreed and the rest strongly disagreed). This fact suggests low levels of engagement from both groups. The questions that arise are 1. does the brand sufficiently promote engagement? and 2. if it does, why is not working?

**Pepsi consumers:**

**Brand Awareness:** Brand awareness results were positive in the three groups; with the exception of brand notoriety that was slightly negative in the group of Facebook followers. This represents an odd result, as it was expected that brand followers on Facebook would better remember the brand than, for instance, non-followers.

**Brand Image:** Concerning the perception of the brand’s performance, all groups disagreed that the brand is a relevant option whenever they are thirsty. In addition, only consumers that follow the brand on Facebook agreed to like the look and design of the brand (non-Facebook followers neither agreed nor disagreed), and the price (the two groups neither agreed nor disagreed). Moreover, the three groups neither agreed nor disagreed if Pepsi is socially responsible and brings good memories. For non-followers and Facebook users, they disagreed and strongly disagreed if people they admire and respect use this brand.

Still questioning about the brand image, the three groups neither agreed nor disagreed to be satisfied with the brand, as well as if the brand is better than other products of the same category. Moreover, Facebook users neither agreed nor disagree if the brand is unique and non-Facebook users disagreed on that.

Brand’s participants on Facebook seems to have no impact on the perception of their trust, and on whether the brand takes their interests in mind, since the three groups were indecisive about it (neither agreed nor disagreed). In addition, for the three groups the brand gives them no feelings of social approval and security.
**Brand Loyalty:** All groups responded that they would not go to a different place if they do not find Pepsi. Consistent with these results, non-followers and non-Facebook users strongly disagreed to frequently consume Pepsi, suggesting a possible small influence of the brand participation on the SNS on consumption habits.

**Brand Relationship:** Curiously, any of the groups admits liking the brand (they all neither agreed nor disagreed), feeling proud to have others know they consume the brand and feel connected with other Pepsi consumers (they all strongly disagreed). Pepsi Facebook page followers disagreed on whether they identify themselves with the brand, while non-followers and non-Facebook users strongly disagreed. Overall, the three groups have also shown low levels of engagement and attachment by not being interested in learning more about the brand and to see the brand only as a consumption product (brand followers disagreed and the rest strongly disagreed).

Regarding the Facebook usage, both consumers that follow the brand on Facebook and those that do not follow showed no interest to add comments or likes on the brand’s Facebook page, or even to share brand’s posts on their Facebook page. As it happened with Coca-Cola consumer’ results, brand’s participation on Facebook seems to have no impact on Pepsi consumer Facebook users levels of engagement.

**Study 2 – American sample**

**Coca-Cola consumers:**

**Brand Awareness:** Brand awareness results were positive in the three groups. Once again, this result confirms the correct selection of the analyzed brand for this sample.

**Brand Image:** Consumers that follow Coca-Cola on Facebook had a better reaction towards the look and design of the brand, its price, and if they consider the brand as
a relevant option whenever they are thirsty, than the two other groups. For non-followers, they neither agreed nor disagreed if they like the price, while the non-Facebook users neither agreed nor disagreed if they like the look and design of the brand and the price. Similarly, consumers that follow Coca-Cola on Facebook had better levels of brand imagery. Non-Facebook users, for instance, neither agreed nor disagreed if the brand is social responsible (but agreed with the two other questions from the imagery group), and non-followers only strongly disagreed with the fact that the brand is social responsible and people they admire and respect use this brand, and neither agreed nor disagreed if the brand brings good memories. In addition, consumers that follow Coca-Cola on Facebook have better judgments about the brand than non-followers, which in turn shown better results than non-Facebook users. Coca-Cola followers agreed with all question with the exception of whether the brand is unique. Non-follower consumers neither agreed nor disagreed if the brand takes their interest in mind. On the other hand, non-Facebook users neither agreed nor disagreed that the brand takes their interest in mind, is unique, and is better than other products of the same category. Finally, again, Coca-Cola followers on Facebook have shown better results regarding their feelings for the brand, since brand followers respondent positively to the three questions; non-Facebook users, neither agreed nor disagreed that the brand gives them the feeling of social approval, strongly disagree that the brand gives the feeling of security, and agreed that they like the brand, while non-followers neither agreed nor disagreed if they like it, strongly disagreed if the brand provides them the feeling of social approval, and disagreed it gives the feeling of security.

**Brand Loyalty:** Brand followers answered were more positive (or less negative) than the other two groups as to loyalty for the brand.

**Brand Relationship:** Although the Facebook users groups like the brand, the engagement levels obtained were very low, revealing a similar effect of disagreement on both non-followers and non-Facebook users. Moreover, despite the fact that the three groups agreed to recommend the brand in the future, they
disagree with sharing the brand’s posts on their personal Facebook page (for Facebook users), and only brand followers agreed disagreed about talking about the brand (online or offline). Non-followers, on the other hand, disagreed about identifying themselves with the brand, about talking about the brand, to be interested in learning more about the brand, to feel proud to let others know they use the brand, and to feel strongly connected with others who use the brand. Non-Facebook users, though they agreed to recommend the brand, strongly disagree about talking about it online and offline, to be interested in learning more about the brand, to feel proud to let others know they use the brand, and to feel strongly connected with others who use the brand.

**Pepsi consumers:**

**Brand Awareness:** Brand awareness results were positive in the three groups.

**Brand Image:** Followers of the brand Pepsi on Facebook have shown better performance perception and imagery than the rest of the groups. In fact, non-followers had no strong opinion about these two areas (they neither agreed nor disagreed on all questions) and non-Facebook users neither agreed nor disagreed with all questions, except with the look and design of the brand (they strongly disagreed) and agreed that the brand is a relevant option.

Regarding the measurement on brand judgments, brand followers agreed with all questions, except they neither agreed nor disagreed if the brand takes their interests in mind and if the brand is better than other products of the same category. On the other hand, non-followers neither agreed nor disagreed on all questions, with the exception of liking the taste/quality of the brand, with which they agreed. As for non-Facebook users, they disagreed and strongly disagreed with the taste and quality of the brand, with trusting the brand and to consider that the brand is unique. They neither agreed nor disagreed that the brand takes their interests in mind, that the brand is better than other products of the same category, and that they are satisfied with the brand.
Both followers and non-followers neither agreed nor disagreed liking the brand (non-Facebook users agreed). Furthermore, for the group of non-followers and non-Facebook users the brand gives them no feeling of social approval and security, while brand followers neither agreed nor disagreed.

**Brand Loyalty:** The three groups disagreed about frequently consuming the brand and strongly disagreed to go to a different place to have Pepsi if they do not find it.

**Brand Relationship:** As for engagement levels, brand followers and non-Facebook users share the fact that they disagreed identify with the brand. In relation to the rest of the questions on this topic, the three groups neither agreed nor disagreed or strongly disagreed. For instance, despite the fact that Pepsi consumers follow the brand on Facebook, they strongly disagreed on participating on the brands page or to share the brand’s posts on their Facebook page. Moreover, this group neither agreed nor disagreed to recommend the brand in the future.

**- Quantitative analysis:**

To better choose the appropriate test it was necessary to first test the normal distribution of the data. The results from the Smirnov and Shapiro Test applied to Studies 1 and 2 can be founding in appendix, and are the following.

In study 1, Coca-Cola consumers simultaneously brand followers have no normal distribution, while the two other groups have a normal distribution. Moreover, Pepsi consumers three groups have a normal distribution.

On the other hand, in study 2, Coca-Cola consumers have all a normal distribution, as well as Pepsi consumers groups.

Therefore, the statistical non-parametric test Mann-Whitney U and the parametric test ANOVA were used to assess the validity of the suggested hypothesis. Specifically the mean ranks of brand followers on Facebook (1) and the group of consumers that
use the social network site but don’t follow the brand (2), as well as the mean ranks of brand followers with non-Facebook users (3) were compared.

**Testing Hypothesis for Study 1:**

Table 5 and 6 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-followers – brand equity.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Equity</td>
<td>1</td>
<td>32</td>
<td>149.78</td>
<td>4793.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>88.49</td>
<td>14513.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7 and 8 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-followers – brand awareness.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Awareness</td>
<td>1</td>
<td>32</td>
<td>92.88</td>
<td>2972.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>99.60</td>
<td>16334.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Equity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>983.00</td>
<td></td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>14513.00</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>-.592</td>
<td></td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics*</th>
<th>Brand Awareness</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>2444.00</td>
<td></td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>2972.00</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>-.812</td>
<td></td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.417</td>
<td></td>
</tr>
</tbody>
</table>
Table 9 and 10 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-followers – brand image.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Image</td>
<td>1</td>
<td>32</td>
<td>139.61</td>
<td>4467.50</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>90.48</td>
<td>14838.50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Image</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mann-Whitney U</td>
</tr>
<tr>
<td></td>
<td>1308.50</td>
</tr>
<tr>
<td></td>
<td>Wilcoxon W</td>
</tr>
<tr>
<td></td>
<td>14838.50</td>
</tr>
<tr>
<td></td>
<td>Z</td>
</tr>
<tr>
<td></td>
<td>-4.485</td>
</tr>
<tr>
<td></td>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 11 and 12 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-followers – brand loyalty.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Loyalty</td>
<td>1</td>
<td>32</td>
<td>146.27</td>
<td>4680.50</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>89.18</td>
<td>14625.50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mann-Whitney U</td>
</tr>
<tr>
<td></td>
<td>1095.50</td>
</tr>
<tr>
<td></td>
<td>Wilcoxon W</td>
</tr>
<tr>
<td></td>
<td>14625.50</td>
</tr>
<tr>
<td></td>
<td>Z</td>
</tr>
<tr>
<td></td>
<td>-5.281</td>
</tr>
<tr>
<td></td>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 13 and 14 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-followers – brand relationship.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Relationship</td>
<td>1</td>
<td>32</td>
<td>143.42</td>
<td>4589.50</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>89.73</td>
<td>14716.50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mann-Whitney U</td>
</tr>
<tr>
<td></td>
<td>1186.50</td>
</tr>
<tr>
<td></td>
<td>Wilcoxon W</td>
</tr>
<tr>
<td></td>
<td>14716.50</td>
</tr>
<tr>
<td></td>
<td>Z</td>
</tr>
<tr>
<td></td>
<td>-4.909</td>
</tr>
<tr>
<td></td>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>
Table 15 and 16 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-followers – brand equity.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand equity</td>
<td>1</td>
<td>16</td>
<td>132.84</td>
<td>2125.50</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>86.37</td>
<td>14164.50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th></th>
<th>Brand equity total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>634.500</td>
<td></td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>14164.500</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>-3.407</td>
<td></td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.001</td>
<td></td>
</tr>
</tbody>
</table>

Table 17 and 18 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-followers – brand awareness.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Awareness</td>
<td>1</td>
<td>32</td>
<td>102.84</td>
<td>3291.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>97.65</td>
<td>16015.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th></th>
<th>Brand awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>2485.000</td>
<td></td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>16015.000</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>-.546</td>
<td></td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.585</td>
<td></td>
</tr>
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</table>

Table 19 and 20 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-followers – brand image.

<table>
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<th>Ranks</th>
<th>Groups</th>
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<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Image</td>
<td>1</td>
<td>16</td>
<td>121.75</td>
<td>1948.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>87.45</td>
<td>14342.00</td>
</tr>
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<td></td>
<td>Total</td>
<td>180</td>
<td></td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Test Statistics</th>
<th></th>
<th>Brand Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>812.000</td>
<td></td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>14342.000</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>-.2.515</td>
<td></td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.012</td>
<td></td>
</tr>
</tbody>
</table>

a. Grouping Variable: Groups
Table 21 and 22 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-followers – brand loyalty.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
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<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Loyalty</td>
<td>1</td>
<td>16</td>
<td>131.56</td>
<td>2105.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>86.49</td>
<td>14185.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>655.00</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>14185.00</td>
</tr>
<tr>
<td>Z</td>
<td>-.3.413</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.001</td>
</tr>
</tbody>
</table>

Table 23 and 24 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-followers – brand relationship.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Relationship</td>
<td>1</td>
<td>16</td>
<td>125.19</td>
<td>2003.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>164</td>
<td>87.12</td>
<td>14287.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>757.00</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>14287.00</td>
</tr>
<tr>
<td>Z</td>
<td>-2.801</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.005</td>
</tr>
</tbody>
</table>

Table 25 and 26 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-Facebook users – brand equity.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Equity</td>
<td>1</td>
<td>32</td>
<td>34.64</td>
<td>1108.50</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>22</td>
<td>17.11</td>
<td>376.50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Total brand equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>123.500</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>376.500</td>
</tr>
<tr>
<td>Z</td>
<td>-.045</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>
Table 27 and 28 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-Facebook users – brand awareness.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Awareness</td>
<td>1</td>
<td>32</td>
<td>27.06</td>
<td>866.00</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>22</td>
<td>28.14</td>
<td>619.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
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</tr>
<tr>
<td>Wilcoxon W</td>
<td>866.00</td>
</tr>
<tr>
<td>Z</td>
<td>-3.12</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.755</td>
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</table>

Table 29 and 30 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-Facebook users – brand image.

<table>
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<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Image</td>
<td>1</td>
<td>32</td>
<td>34.33</td>
<td>1098.50</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>22</td>
<td>17.57</td>
<td>386.50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>133.500</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>386.500</td>
</tr>
<tr>
<td>Z</td>
<td>-3.851</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 31 and 32 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-Facebook users – brand loyalty.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Loyalty</td>
<td>1</td>
<td>32</td>
<td>32.59</td>
<td>1043.00</td>
</tr>
<tr>
<td></td>
<td>3</td>
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</tr>
<tr>
<td></td>
<td>Total</td>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>189.00</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>442.00</td>
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<tr>
<td>Z</td>
<td>-2.944</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.003</td>
</tr>
</tbody>
</table>
Table 33 and 34 - Mann-Whitney Test of the samples Coca-Cola consumers and followers of the brand on Facebook and non-Facebook users – brand relationship

<table>
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<td>Brand</td>
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</tr>
<tr>
<td>Relationship</td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>N</td>
</tr>
<tr>
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<tr>
<td>3</td>
<td>22</td>
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<tr>
<td>Total</td>
<td>54</td>
</tr>
<tr>
<td></td>
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</tr>
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</table>

Table 35 and 36 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-Facebook users – brand equity.

<table>
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<th>Test Statistics</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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</table>

a. Not corrected for ties.
Table 37 and 38 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-Facebook users – brand awareness.

<table>
<thead>
<tr>
<th>Ranks</th>
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<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Awareness</td>
<td>1</td>
<td>16</td>
<td>18.75</td>
<td>300.00</td>
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<td></td>
<td>3</td>
<td>23</td>
<td>20.87</td>
<td>48.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>164.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>300.000</td>
</tr>
<tr>
<td>Z</td>
<td>-.665</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.506</td>
</tr>
<tr>
<td>Exact Sig. [2*(1-tailed Sig.)]</td>
<td>.582*</td>
</tr>
</tbody>
</table>

a. Not corrected for ties.

Table 39 and 40 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-Facebook users – brand image.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Image</td>
<td>1</td>
<td>16</td>
<td>24.19</td>
<td>387.00</td>
</tr>
<tr>
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<td>3</td>
<td>23</td>
<td>17.09</td>
<td>393.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>117.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>393.000</td>
</tr>
<tr>
<td>Z</td>
<td>-.919</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.055</td>
</tr>
<tr>
<td>Exact Sig. [2*(1-tailed Sig.)]</td>
<td>.057*</td>
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</table>

a. Not corrected for ties.
Table 41 and 42 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-Facebook users – brand loyalty.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
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<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Loyalty</td>
<td>1</td>
<td>16</td>
<td>24.66</td>
<td>394.50</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>23</td>
<td>16.76</td>
<td>385.50</td>
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<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>109.500</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>385.500</td>
</tr>
<tr>
<td>Z</td>
<td>-2.196</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.028</td>
</tr>
<tr>
<td>Exact Sig. [2*(1-tailed Sig.)]</td>
<td>.032a</td>
</tr>
</tbody>
</table>

a. Not corrected for ties.

Table 43 and 44 - Mann-Whitney Test of the samples Pepsi consumers and followers of the brand on Facebook and non-Facebook users – brand relationship.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Groups</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Relationship</td>
<td>1</td>
<td>16</td>
<td>25.38</td>
<td>406.00</td>
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<td></td>
<td>3</td>
<td>23</td>
<td>16.26</td>
<td>374.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Brand Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>98.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>374.000</td>
</tr>
<tr>
<td>Z</td>
<td>-2.478</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.013</td>
</tr>
<tr>
<td>Exact Sig. [2*(1-tailed Sig.)]</td>
<td>.013a</td>
</tr>
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</table>

b. Not corrected for ties.
Testing Hypothesis for Study 2:

Table 45 and 46 - ANOVA Test of the samples Coca-Cola consumers and followers of the brand on Facebook, non-followers, and non-Facebook users.

ANOVA - Brand equity

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>6698.269</td>
<td>2</td>
<td>3349.134</td>
<td>10.959</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>54397.444</td>
<td>178</td>
<td>305.604</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61095.713</td>
<td>180</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparisons - Dependent Variable: brand equity

<table>
<thead>
<tr>
<th>(I) Groups</th>
<th>(J) Groups</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>24.331*</td>
<td>5.226</td>
<td>.000</td>
<td>11.43</td>
<td>37.23</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>27.667</td>
<td>11.284</td>
<td>.052</td>
<td>-.19</td>
<td>55.52</td>
</tr>
<tr>
<td>Scheffe</td>
<td>2</td>
<td>1</td>
<td>-24.331*</td>
<td>5.226</td>
<td>.000</td>
<td>-37.23</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3.335</td>
<td>10.184</td>
<td>.948</td>
<td>-21.80</td>
<td>28.47</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>-27.667</td>
<td>11.284</td>
<td>.052</td>
<td>-55.52</td>
<td>.19</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

The findings from ANOVA Test applied to Coca-Cola consumers suggest a difference between groups. Therefore, it was then applied the Scheffe' test, which is customarily used with unequal sample sizes, to determine which groups are differences. The results show that groups 1 and 2, and 1 and 3 differ. Curiously, the findings also suggest no differences between the groups 2 and 3.
Table 47 and 48 - ANOVA and Scheffe' test of the samples Coca-Cola consumers on brand awareness.

ANOVA - Brand awareness

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.043</td>
<td>2</td>
<td>.022</td>
<td>.121</td>
<td>.886</td>
</tr>
<tr>
<td>Within Groups</td>
<td>31.670</td>
<td>178</td>
<td>.178</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>31.713</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparisons - Dependent Variable: Brand awareness

<table>
<thead>
<tr>
<th>(I) Groups</th>
<th>(J) Groups</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>-.027</td>
<td>.126</td>
<td>.977</td>
<td>-.34 -.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.083</td>
<td>.272</td>
<td>.954</td>
<td>-.59 .76</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td>1</td>
<td>.027</td>
<td>.126</td>
<td>.977 -.28</td>
<td>.34</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>.027</td>
<td>.126</td>
<td>.977</td>
<td>-.28 .34</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.110</td>
<td>.246</td>
<td>.904</td>
<td>-.50 .72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>-.083</td>
<td>.272</td>
<td>.954</td>
<td>-.76 .59</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-.110</td>
<td>.246</td>
<td>.904</td>
<td>-.72 .50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 49 and 50 - ANOVA and Scheffe' test of the samples Coca-Cola consumers on brand image.

ANOVA - Brand image

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1273.727</td>
<td>2</td>
<td>636.864</td>
<td>6.433</td>
<td>.002</td>
</tr>
<tr>
<td>Within Groups</td>
<td>17621.333</td>
<td>178</td>
<td>98.996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18895.061</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Multiple Comparisons - Dependent Variable: Brand image

<table>
<thead>
<tr>
<th>(I) números</th>
<th>(J) números</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Confidence</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>10.667*</td>
<td>2.974</td>
<td>.002</td>
<td>3.32</td>
<td>18.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10.333</td>
<td>6.422</td>
<td>.277</td>
<td>-5.52</td>
<td>26.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>-10.667*</td>
<td>2.974</td>
<td>.002</td>
<td>-18.01</td>
<td>-3.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-.333</td>
<td>5.796</td>
<td>.998</td>
<td>-14.64</td>
<td>13.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>-10.333</td>
<td>6.422</td>
<td>.277</td>
<td>-26.19</td>
<td>5.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.333</td>
<td>5.796</td>
<td>.998</td>
<td>-13.97</td>
<td>14.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

### Table 51 and 52 - ANOVA and Scheffe' test of the samples Coca-Cola consumers on brand loyalty.

#### ANOVA – Brand loyalty

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>47.637</td>
<td>2</td>
<td>23.818</td>
<td>7.692</td>
<td>.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>551.159</td>
<td>178</td>
<td>3.096</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>598.796</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Multiple Comparisons - Dependent Variable: Brand loyalty

<table>
<thead>
<tr>
<th>(I) números</th>
<th>(J) números</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Confidence</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2.052</td>
<td>.526</td>
<td>.001</td>
<td>.75</td>
<td>3.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1.500</td>
<td>1.136</td>
<td>.420</td>
<td>-1.30</td>
<td>4.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>-2.052*</td>
<td>.526</td>
<td>.001</td>
<td>-3.35</td>
<td>-1.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-.552</td>
<td>1.025</td>
<td>.865</td>
<td>-3.08</td>
<td>1.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>-1.500</td>
<td>1.136</td>
<td>.420</td>
<td>-4.30</td>
<td>1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.552</td>
<td>1.025</td>
<td>.865</td>
<td>-1.98</td>
<td>3.08</td>
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<td></td>
</tr>
</tbody>
</table>
Table 53 and 54 - ANOVA and Scheffe’s test of the samples Coca-Cola consumers on brand relationship.

ANOVA - Brand relationship

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>668.415</td>
<td>2</td>
<td>334.208</td>
<td>8.130</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>7317.231</td>
<td>178</td>
<td>41.108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7985.646</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparisons - Dependent Variable: Brand relationship

<table>
<thead>
<tr>
<th></th>
<th>(I) Groups</th>
<th>(J) Groups</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheffe</td>
<td>1</td>
<td>2</td>
<td>7.727</td>
<td>1.917</td>
<td>.000</td>
<td>3.00 - 12.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>7.500</td>
<td>4.139</td>
<td>.197</td>
<td>-2.72 - 17.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>-7.727</td>
<td>1.917</td>
<td>.000</td>
<td>-12.46 - -3.00</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>-.227</td>
<td>3.735</td>
<td>.998</td>
<td>-9.45 - 8.99</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>-7.500</td>
<td>4.139</td>
<td>.197</td>
<td>-17.72 - 2.72</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>.227</td>
<td>3.735</td>
<td>.998</td>
<td>-8.99 - 9.45</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the 0.05 level.

Table 55 and 56- ANOVA Test of the samples Pepsi consumers and followers of the brand on Facebook, non-followers, and non-Facebook users.

ANOVA - Brand equity

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>9122.701</td>
<td>2</td>
<td>4561.351</td>
<td>14.139</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>73231.299</td>
<td>227</td>
<td>322.605</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(I) Groups</td>
<td>(J) Groups</td>
<td>Mean Difference (I-J)</td>
<td>Std. Error</td>
<td>Sig.</td>
<td>95% Confidence Interval</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>-----------------------</td>
<td>------------</td>
<td>------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>19.440*</td>
<td>3.744</td>
<td>.000</td>
<td>10.21 - 28.67</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>27.635*</td>
<td>9.647</td>
<td>.018</td>
<td>3.87 - 51.40</td>
</tr>
<tr>
<td>Scheffe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>-19.440*</td>
<td>3.744</td>
<td>.000</td>
<td>-28.67 - -10.21</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>8.195</td>
<td>9.070</td>
<td>.665</td>
<td>-14.15 - 30.54</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>-27.635</td>
<td>9.647</td>
<td>.018</td>
<td>-51.40 - -3.87</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>-8.195</td>
<td>9.070</td>
<td>.665</td>
<td>-30.54 - 14.15</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

Table 57 and 58 - ANOVA and Scheffe' test of the samples Pepsi consumers on brand awareness.

ANOVA - Brand awareness

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.436</td>
<td>2</td>
<td>.218</td>
<td>2.187</td>
<td>.115</td>
</tr>
<tr>
<td>Within Groups</td>
<td>22.625</td>
<td>227</td>
<td>.100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23.061</td>
<td>229</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparisons - Dependent Variable: Brand awareness
Table 59 and 60 - ANOVA and Scheffe' test of the samples Pepsi consumers on brand image.

**ANOVA – Brand image**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1090.025</td>
<td>2</td>
<td>545.013</td>
<td>5.223</td>
<td>.006</td>
</tr>
<tr>
<td>Within Groups</td>
<td>23688.970</td>
<td>227</td>
<td>104.357</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24778.996</td>
<td>229</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Multiple Comparisons - Dependent Variable: Brand image**

<table>
<thead>
<tr>
<th>Scheffe</th>
<th>(I) Groups</th>
<th>(J) Groups</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>6.404*</td>
<td>2.130</td>
<td>.012</td>
<td>1.16</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>11.769</td>
<td>5.487</td>
<td>.103</td>
<td>-1.75</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>-6.404*</td>
<td>2.130</td>
<td>.012</td>
<td>-11.65</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>-11.769</td>
<td>5.487</td>
<td>.103</td>
<td>-25.29</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>-5.365</td>
<td>5.159</td>
<td>.583</td>
<td>-18.08</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.
Table 61 and 62 - ANOVA and Scheffe' test of the samples Pepsi consumers on brand loyalty.

ANOVA – Brand loyalty

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>68.955</td>
<td>2</td>
<td>34.477</td>
<td>10.253</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>763.345</td>
<td>227</td>
<td>3.363</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>832.300</td>
<td>229</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparisons - Dependent Variable: Brand loyalty

<table>
<thead>
<tr>
<th>(I) Groups</th>
<th>(J) Groups</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>1.721</td>
<td>.382</td>
<td>.000</td>
<td>.78 - 2.66</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1.981</td>
<td>.985</td>
<td>.135</td>
<td>-4.5 - 4.41</td>
</tr>
<tr>
<td>Scheffe</td>
<td>2</td>
<td>-1.721</td>
<td>.382</td>
<td>.000</td>
<td>-2.66 - .78</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>-1.981</td>
<td>.985</td>
<td>.135</td>
<td>-4.41 - .45</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>.260</td>
<td>.926</td>
<td>.961</td>
<td>-2.54 - 2.02</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

Table 63 and 64 - ANOVA and Scheffe' test of the samples Pepsi consumers on brand relationship.

ANOVA - Brand relationship

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1572.818</td>
<td>2</td>
<td>786.409</td>
<td>17.418</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>10248.904</td>
<td>227</td>
<td>45.149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11821.722</td>
<td>229</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparisons - Dependent Variable: Brand relationship

<table>
<thead>
<tr>
<th>(I) Groups</th>
<th>(J) Groups</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
</table>
Overall, the results revealed more resemblances between the groups of non-followers and non-Facebook users than between these groups and Facebook followers. Moreover, brand followers have shown greater brand equity levels than the two other groups, suggesting the existence of a positive impact of brands participation on Facebook on its brand equity results. On the other hand, users that follow the brand have better levels than consumers that don’t use Facebook.

Regarding **Study 1**, and in support of the presented hypothesis, Coca-Cola followers’ revealed better brand equity results than the groups of users that do not follow the brand on Facebook and do not use Facebook (except on brand notoriety). This finding is supported by the sigma result that suggest the rejection of the H0.

As to Pepsi consumers, the statistical results suggest no difference on brand equity between the groups of brand followers (1) on Facebook and non-followers (2), although there is a difference on brand image, brand loyalty, and brand relationship.

In relation to the group of non-Facebook users, the findings suggest there is difference between this group and brand followers. Yet, no differences in brand awareness and brand image.

Regarding **Study 2**, in particular Coca-Cola consumers, the findings suggest no difference between any groups on brand awareness. However, there are differences
between the groups’ brand followers (1) and non-followers (2) on brand image, brand loyalty and brand relationship (and no difference between the groups 1 and 3, and 2 and 3).

On the other hand, there are differences between the groups of Pepsi consumers, specifically between groups 1 and 2, and 1 and 3. And no difference between groups 2 and 3. Specifically, there are no differences on brand awareness between any groups; differences between the groups 1 and 2 on brand image, brand loyalty, and brand relationship; and differences between the groups 1 and 3 on brand relationship.

3.1.4. Conclusions and Implications

The results from Study 1 and 2 suggest that the three groups behave differently. Specifically consumers that follow the brand on Facebook in general have better brand equity levels than the other two groups. This study also shows that of the four analyzed situations, the groups of non-followers of the brand on Facebook and non-users have more similarities than with the group of brand followers on Facebook. Moreover, the findings from both studies support the proposed suggestion, since Coca-Cola followers have revealed better brand equity levels, followed by non-followers. Non-Facebook users had the worst results. Regarding Pepsi consumers, brand followers had better brand equity results followed by non-Facebook users and then by non-followers.

However, establishing a cause-effect relation between the brand’s participation on online social networks and better brand equity results is not yet possible, because it is not known if the consumers that follow the brand’s profile on Facebook already had good levels of brand equity compared with the other groups, or if their results were influenced after engaging with the brand in this online environment. In other words, it is not known if these results precede or are an outcome of following the brand on the analyzed website.

In addition, even though brand followers have better brand equity results than the two other groups, curiously and despite the fact that they are connected in an
interactive platform with the brand, their attachment, engagement and advocative results were surprisingly low (yet, better than the other groups), suggesting that this resource might not be appropriately explored by the brand. Furthermore, there seems to be no difference in the likelihood to talk about brands whether the consumer is in an offline or online environment.

Overall, it was also noted that the female group seems to be more likely to use Facebook (regardless if they follow or not the brand). These finding contribute to the suggestion that women are keener to engage in social network activities. A conclusion similar to the one that Auren Hoffman (2008) proposes, when she advocated that female online behavior is more focused on relationships than men. In other words, women spend more time on social network sites than men (with the exception of the popular social network site LinkedIn), busying themselves with building relationships with existing and new friends. Therefore, if we also consider that women tend to talk more about their purchases with their network of contacts than men, then women represent an attractive group of consumers and possible brand ambassadors on this type of website.

One last important managerial impact that can be drawn from this study is the proposed statistically validated scale that analyses the brand equity from a customer perspective and allows the separate assessment of different elements that compose the overall brand perception and attitude towards it. In addition, it is worth noting that this scale encompasses most of the basic building blocks of brand equity that have been reported in the branding literature, besides adding new dimensions.

3.1.5. Limitations and Suggestions

As with other studies, this one has some limitations that should be considered when analyzing and generalizing the results.

First of all, the sample used consisted of undergraduate and graduate students due to their availability. This fact inhibits the generalization of the findings to other populations. Second, concerning the sample size it was easier to find participants that consume the brand and do not follow any of the analyzed brands on Facebook
than consumers that follow. For further validation of the developed scale it would be interesting to include larger and non-student samples. A third limitation is related to the brands category selection. It would seem reasonable that what makes a brand valuable in a business-to-business (B2B) context will differ from a business-to-consumer (B2C) context, so it would also be interesting to submit the same scale to other categories, specifically to the service industry and to B2B environments for further validation of the scale. Finally, as it was mentioned in the beginning of this paper, the main goal of the suggested scale is to be simple and easily applied to any sample, in order to give an overall brand image result. Many other items can be added to the scale and it is highly recommended to do so (particularly in the brand loyalty construct) whenever a specific construct raises more interest to the researcher. Therefore, it is stressed that this model is not exhaustive in each construct analysis, which is why only 31 items were proposed.

Further research based on different methodology and capable of proving the direct cause-effect relation between positive brand equity and brands participation on social network sites is welcome. Moreover, it would be interesting to analyze if the number of brands followed by a user on a social network site can influence the brand notoriety results.
3.2. – STUDY 2: The Sony Pictures Portugal Case Study - Netnography

Even though focus groups and interviews are not very time-consuming, and are simpler and easy to conduct, they are inevitably obtrusive and unnatural, which jeopardizes the collected data and respective findings. In this sense, the quality of the findings obtained with an ethnography study, although it is full-length, immersive, in-person, and certainly not easy to conduct, is worth the investment.

Ethnography consists of an anthropological approach popular among social science researchers that refers to the act of doing ethnographic fieldwork and to the representations based on such a study. For Kozinets (2011), ethnography is grounded in context and it is infused with, and imbues, local knowledge of the particular and specific. This type of research method enables the researcher to gain a detailed and nuanced understanding of a social phenomenon, by offering many rich opportunities to write culture and to represent it.

While the term ethnography is already popular among social scientists, netnography, on the other hand, is a more recent phenomenon. Coined by Kozinets, “netnography adapts common participant-observation ethnographic procedures to the unique contingencies of computer-mediated social interaction: alteration, accessibility, anonymity, and archiving” (Kozinets, 2011, p.58).

One major advantage of netnography, as well as of ethnography, consists in the natural environment where the data is collected, allowing the natural occurrence of behaviors. Moreover, in the netnography process, the researcher uses information publicly available on the Internet, becoming less time consuming, resource intensive, and simpler, process than ethnography.

It is worth stressing that netnography differs from content analysis, in the sense that the content analyst simply scan the archives of online communities, but does not read it deeply for its cultural information, pondering them and seeking to learn from them how to live in that community and to identify as a community member, as a netnographer does.
3.2.1. Problem Definition

Hypothesis 3 states that brands participation on Facebook contributes to the generation of positive word of mouth (WOM) from brands’ followers.

To test the veracity of this statement, a qualitative approach was chosen, specifically, the analysis of a case through netnography. Therefore, the main research question is to understand if a brand’s participation on Facebook contributes to positive WOM. Consequently, the research focus of this study is the followers’ reactions towards a brand’s participation on Facebook and a brand’s relation with its followers on its profile page.

3.2.2. Methodology

Based on a non-participant activity, the netnographic data collection type used were the archival data, where data was copied directly from pre-existing computer-mediated communication of online community members, and the fieldnote data on the observations of the community, its members, interactions, and meanings.

In this study, Sony Pictures Portugal’s presence on the social network site Facebook is analyzed, in particular during the months of January until December of 2012. The boundary of the social network is the online site where the social activity was found, specifically around the Sony Pictures Portugal Facebook page.

Sony Pictures represents a main global film production and distribution company of Japanese multinational technology and media conglomerate Sony. Because this brand does not directly commercialize its services to its final client in Portugal, it was chosen to represent the business-to-business market.

Sony Pictures Portugal’s official Facebook page was created at 17-06-2010 and in June 2013 had 19.223 followers. Sony Pictures Portugal also has presence in other social network sites, such as Twitter, and Youtube.

Because participants publicly expose their activity on Facebook, the netnographer is not forced to engage or to participate, creating no disruption in the studied
community. Moreover, since the collected data is public, ethically it was not necessary to ask for permission to get access and to work with it.

3.2.3. Results and Findings

During the analyzed period, Sony Pictures Portugal published 64 posts on its profile page, which in turn generated 821 likes, 79 comments, and 105 sharing posts from brand followers. This data was analyzed from two perspectives: brand’s participation and followers’ participation.

- Brand’s participation

The majority of the published posts from the brand pertain to services promotion using movie clips or images (95%), followed by events (3%), and dialogue attempt (2%).

As to brand’s/client interaction, it was noted that the brand chose to talk directly to its followers using the second person singular form. This type of approach is common among friends or with people with whom there’s a direct or close relation, suggesting the brand’s desire to establish a close relationship with its followers.

However, it was also noted that Sony Pictures Portugal’s participation on Facebook is not consistent, since it does not reply directly and equally to all clients. For instance, two different followers have posted direct questions on the brand’s page regarding the brand’s services in different time periods, and on both occasions the brand did not react publicly to the published post. Since it is not possible to ascertain if the brand ever replied through private message, this lack of visible reaction gives the idea of silence, or no answer, which may discourage other member’s from contacting the brand in the future. More importantly, it suggests a lack of consumer-focus or relationship-building strategy.

In addition, even though the brand allows followers to express their opinions, it does not react towards them, even when they are negative comments about its services.
For instance, on his first message posted on the brand’s virtual page (at least on 2012), the follower “Nuno Francisco” showed dissatisfaction towards the brand’s services. On the second post he questioned the brand about the title of one movie. Despite the fact that he did not receive any answer on both posts (at least publicly), it is known that he continued to participate in the community by posting a third post, this time supporting the brand.

This continuing absence of feedback to “Nuno Francisco” suggests that most probably the brand does not do an individual follow-up of followers’ comments, which could jeopardize the followers desire to participate on the brand page in the future. In this particular case, “Nuno Francisco” kept posting, perhaps because he is a loyal client and therefore more resistant to brand attitude change. If he were not, it would be plausible to assume that he would stop engaging with the brand.

However, there is the possibility that Nuno intended to address other brand followers and not the brand, looking for support or criticism from other people who follow the brand. Indeed, on two situations (the first and the third) since he is a participant in a conversation (as shown below) it could be evidence for such a view. But it appears as though he is addressing the brand, specifically in the second comment, for the following reasons: he is making a direct question that only the page owner, i.e., the brand can answer with 100% certainty. Moreover, when a participant choose to speak about the brand services on the brand Facebook page he knows that the probability of the brand reading it is high, and when he expose dissatisfaction it is assumed that he hopes the brand meet his expectations.

On the other hand, it could also be that the brand does not respond to every individual, but reads the threads and when enough people share a similar concern it then addresses all of those concerned.
Figure 10 – Followers posts.

“It’s Daniel Rodrigues: Are you not going to predict the premiere?”

João Costa: It could come a little sooner...well, we're going to have to wait...

Nuno Francisco: 3 months, I think that is too much...”

Figure 11 – Follower post.

“Nuno Francisco: the title is “The Fantastic Spider-Man” or “The Fantastic Spider-Man-Part I”?

Figure 12 – Followers posts.

“Doces ou Salgados: In the original “Premium Rush”

Helena Rodrigues: Awful title...lol

João Costa: With this one as long as it comes I’ll be satisfied, with that title or any other...

Nuno Francisco: The title is very good, it is very similar with the one from last year “Entrega Armadilhada” (30 Minutes or Less), a good comedy and crime movie but unfortunately did not come
to Portugal (also with the distributed company Columbia TriStar Warner). Let’s just hope it won’t have the same fate

P.S.- The premiere is November 8th 2012”

Perhaps this lack of follow-up from the company might explain why in the rare moments it took time to promote engagement, followers failed to answer back. On three different occasions, Sony Pictures Portugal attempted to engage followers, but in two cases were met only with likes and on the third occasion only three followers answered the brand.

Figure 13 – Brand post.

“This Wednesday at 10pm, join the movie stars from “That’s My Boy” Adam Sandler and Andy Samberg in a LIVE Chat on the official movie page.

Confirm your presence in this event here.

What questions you would like to ask to these actors? “
Figure 14 – Brand post and followers reactions.

“Total Recall was seen by 36,617 viewers! Were you one of them?! Leave us your comment.

Chico Luarte: ya


Miguel Pinto: I still haven’t had the chance to see it”
Figure 15 – Brand post

“Here they are the Smurfs 2. Tell us what you think of them! Playing August 1 2013 at a theatre near you.”

On the other hand, when the brand listens and devotes time to its followers, they recognize it and value it, by continuing to engage with the brand. Take the example of "Marco Xavier". On his first post he questioned the brand about one of its services. The brand replied directly, and he replied by adding a like on the received answer. Months later, he left another post on the brand’s page expressing satisfaction for its services.
Figure 16 – Followers posts.

“Marco Xavier: Do you have the trailer of The amazing Spider Man in Portuguese?

Pedro Quintão: It is in the top 5 movies I look forward to see in 2012, try not to postpone 😊

Sony Pictures Portugal: Marco Xavier, yes, we do, off course! You can find it on this page on the post bellow or on our official You Tube page:

David Santos: Is going to be a great movie love it!”

Figure 17 – Follower posts.

“Marco Xavier: I can’t wait!”
- Follower’s participation:

Despite the fact that events, such as contests, tend to promote activity and to gather more attention from followers than information-based posts, curiously, brand followers’ reactions to events posts were below the average of the reaction obtained with promotion posts. Events posts received on average 3 and 6 likes, while promotion post received on average 13 likes, 2 sharing posts, and 1 comment. The dialogue posts received 21 likes and 3 comments.

Following the brand’s posts, we can find two types of followers: individuals, and organizations. The latter represents an organization and uses the brand page to collect and share information useful for its own followers, acting as gatekeepers of information provided by Sony. The majority of these organization members choose to only share the brand’s posts, and not to post on the brand’s page, even though exceptions exist (like “Castello Lopes Cinema”).

Figure 18 – Followers posts.

“Bruno: Very Gooooooood!!!!

Mario: Its part of my child imaginary

Castello Lopes Cinemas: Great Poster....

Gabriel: On my birthdayyyyyyyyy

Nuno: That’s not all”

Followers (whether individuals or organizations) commonly express their opinions about the brand’s services by publishing their own posts. The majority of members’ comments express satisfaction towards the brand’s services, and very few are
negative in nature. Sometimes other members react to these posts by adding likes on them or replying. This reaction is expected to encourage members to publish more often, and can also promote the feeling of belonging to a community based on the brand. Other times, although a connection between members’ comments exist, one cannot state that we are in the presence of dialogue between members, because followers’ comments seem to be more of a reaction to the brand’s post than to members’ reactions. In other words, usually there is a share of opinions and information on the same topic, but no kind of direct interaction between members.

If members’ reactions to other members’ posts can lead to the feeling of community, on the other hand, this situation is expected to contradict that feeling. Therefore, the more brand followers interact between them, the more engaged they are expected to be with other members and with the brand, reinforcing the brand relationship construct of the brand equity asset.

Furthermore, with a one-year analysis, it is possible to identify which members are more active in sharing information or replying to the brand, as well as to identify different profiles regarding the type of relation established with the brand and community members. Therefore, based on the findings from the observation period, six following profiles are suggested:

a) **Loyal advocates**: followers that frequently visit the brand’s page and show consistent levels of advocacy activity. “Zluis Conceição” or “Ribeiro Vitor” can be seen as loyal advocates, since they both shared four brand posts on their personal page in different time periods.
Figure 19 and 20: Posts shared by the same user on different days.

b) **Occasional advocates**: followers that express their activity or participation by sharing many of the brand’s posts in a short time period and then “disappear” or stop sharing content, suggesting no visit. The user “Johnys da Silva” represents this type of follower. In the same day he shared on his personal page seven of the brand’s posts, and there is no record of him before or after that period.

Figure 21 and 22: Two posts shared by the same user in the same day.

c) **Brand ambassadors**: they show high levels of engagement, visit the brand’s page frequently, and have enough knowledge to answer other member’s questions. “João Costa”, for instance, may not be the most advocating member of Sony, as he only published one post during one year. Yet, he published thirteen posts on the brand’s page and in some he addresses other members doubts.

Figure 23: Followers posts.
“Pedro: Good-afternoon, I would like to know if the remake of Evil Dead will be distributed by you [Sony Pictures Portugal] in Portugal, since this movie will be distributed by Sony Pictures in the USA. If yes, we hope the Portuguese premiere won’t take too long after the American premiere, because the trailer seems to be a promising movie.

João: Yes, it will be, the premiere will be May 9th.”

![Figure 24: Followers posts.](image)

“Jorge: even in brazil they exhibit first the movies...lol

João: LOL you don’t know what you’re talking about. It is a world premier on the same weekend. May 24th in Portugal, May 25th in brazil, America, UK, and so on!”

d) **Engaged followers:** engaged followers voluntarily express their engagement towards the brand and/or the community by sharing their opinions and emotions regarding the brand’s posts and services. The more posts they share, the more engaged they are expected to be to the brand and/or the community.

![Figure 25: Follower post.](image)

“Miguel: Big fan. Even though I already know the story, have seen the original movie, I’m going to see it today in 3D.”

e) **Unsatisfied followers:** followers that feel the need to approach the brand and the community to publicly express their disappointment, perhaps with the hope of being heard/noted and to possibly change an undesirable situation.
“Alisson: didn’t like it

Alisson: you could have made the continuation with the current. It’s not funny now because everyone knows what is going to happen in that movie. Every one was used to the previous piter that one has nothing to do with it. I hate this movie”

f) Lurkers: any community has lurkers, who may not necessarily be equal to the number of users that follow the brand but do not publicly participate.

- Hypothesis test:

In order to assess if the brand’s participation on Facebook leads to positive WOM, followers’ activities and reactions towards the brand’s posts were analyzed.

The findings clearly suggest that not only followers share the brand’s posts to their friends on their personal Facebook profile page as recommendations, but they also influence other brand followers regardless if they personally know each other or not. Of the 64 posts published by Sony Pictures Portugal, there were 105 direct posts shared by brand followers (Figure 29), that in turn have generated 66 likes, and 4 sharing posts from friends of brand followers (Figure 30). Hence, hypothesis 3 is validated.
“Hugo Pelica: It seems scary... Xixas Lopes Carlos Assuncao Mário Pimpão Tiago Ravasqueira Valter Cerdeira Luis Rodrigues, cinema??????”

Figure 28: Followers posts.

“Gabriel: I’ve already seen it and it was real cool

SciFiWorld Portugal: The SciFiWorld had the opportunity to see it in Sitges and even though it was in Spanish it was very funny.”

Figure 29 – Followers’ reactions to Sony Pictures Portugal’ posts on its official Facebook Page.
Due to privacy settings, not all Facebook users have their activity visible to the public in general. Consequently, though it is possible to know the total number of people that share each post, it is not possible to verify who they all are. Consequently, with the available data, it was possible to determine that men are the top advocates of Sony Pictures Portugal on Facebook. However, the percentage of men that follow the brand, as well as the other two groups (women and organizations), remain unknown.
3.2.4. Conclusions and implications

The netnography findings revealed that brand followers share brand posts on their personal online page and on their friends’ pages, recommending the brand services (movies), hence supporting the advanced hypothesis that a brand’s participation on Facebook leads to positive WOM.

The findings also show that even though the analyzed brand uses a proximity tone to speak with its followers, it fails to engage them in a real relationship, as it seems to have chosen a defensive posture (the kind that ignores both positive and negative feedback) with its public, and does not openly answer all of its followers doubts (at least publicly). Moreover, the brand sometimes promotes engagement with its followers, but then fails to do the follow-up.

On the other hand, followers seem interested in engaging with the brand and with other brand’s followers, suggesting that the brand’s page is capable of satisfying their grouping needs.

Six follower’ profiles are suggested based on observations of followers’ behavior towards the brand and the community. This categorization can be used by companies to distinguish their followers, specifically to identify potential brand ambassadors and advocates. This suggestion aims to contribute to the idea that brand followers should not be treated equally by the brand, since they behave differently towards the brand and the brand’s community, and therefore they do not have the same value.

Moreover, the findings from this study also stress the potential of using the available data on Facebook to evaluate the evolution of their relations with followers and to act accordingly.

Finally, for business companies like Sony Pictures that do not have a direct business relation with the final public, engaging with them should become a primordial task, since companies with whom they do businesses can also follow the brand activity on Facebook and become more aware of the kind of relation the company has with the final public, hence getting to know the potential of the brand’s services.
3.2.5. Limitations and suggestions

One limitation of this study was the difficulty, if not impossibility, of linking the data drawn from the online community to a particular social class, age, and race.

Additionally, not all comments and sharing activity were available to analyze, since not all followers maintain the same privacy settings.

Though the proposed categories and respective descriptions are capable of representing and describing the observed followers’ behavior, further research is necessary to validate them, so that the results can be generalized to other brand communities.

Finally, further research is also necessary to answer the questions: if engaged followers are more engaged with the brand or with the community? And when they publish on the brand’s Facebook page, do they expect the community to answer or the brand?
3.3. STUDY 3 - Econometric analysis of brand’s participation on Facebook

Using the words of the one believed to have crafted the term “econometrics”, “econometrics is by no means the same as economic statistics. Nor is it identical with what we call general economic theory, although a considerable portion of this theory has a definitely quantitative character. Nor should econometrics be taken as synonomous with the application of mathematics to economics. Experience has shown that each of these three viewpoints, that of statistics, economic theory, and mathematics, is a necessary, but not by itself a sufficient, condition for a real understanding of the quantitative relations in modern economic life. It is the unification of all three that is powerful. And it is this unification that constitutes econometrics” (Frisch, 1933, pp. 1-2).

This multidisciplinary unification exceeds the sum of its parts (Greene, 2012) and adds empirical content to economic theory, allowing tested and observed theories to be used for forecasting and policy evaluation (Geweke, Horowitz and Pesaran, 2008). Like any other field that studies human behavior, econometrics cannot be taken as 100% reliable, but can at least provide a quantitative approach to the social science area that aims to be as objective as possible.

Neither “theory” nor “measurement” on their own are sufficient to further the understanding of a social science phenomenon. Theory without measurement can only give a partial and limited analysis of the problem. On the other hand, measurement without theory cannot provide an explanatory answer.

3.3.1. Problem Definition

Hypothesis 4 suggest a causality relation between the variables WOM (number of stories created about the brand’s page) and “new likes”, by anticipating that positive WOM (independent variable) leads to new sign-ups or “likes” (dependent variable) in the brands’ Facebook page.

It should be noted that the collected WOM data does not specify whether the referrals were positive or negative, but represent the number of referrals of the brand tracked on the Facebook website during the analyzed period.
3.3.2. Methodology

The fourth hypothesis (H4) will be analyzed based on some statistical and econometric tests, such as the application of the Granger causality test, which determines the existence of an endogenous relationship between the variables references "word of mouth" and sign-ups ("likes") on the brand’s page on Facebook, and the Pearson Correlation test, which measures how well the variables are related. The data was obtained through the observation of a telecommunication company (that wishes to remain anonymous) by tracking them on the social network site Facebook during an observation period of 61 consecutive days in 2012.

To assess the type of relationship between the predictors of the analyzed variables the VAR model was used. Before using this model, however, it was necessary to confirm whether the variables are stationary or evolving in time series through unit root tests. If the result is stationary in nature (and also confirmed the relationship between the variables) it will be possible to apply the VAR model, which will measure the dynamic interaction between both variables.

Afterward, a study was conducted on the elasticity of communication "word of mouth" through the "impulse response function" (IRF) test, which separates the immediate effects (e.g, taken on the first day) of short (between the second and fifth days) and long (greater than the fifth day) period. The duration of the effects of "word of mouth" in the inscriptions is presented graphically, along with some other variables.

Based on the findings from previous tests, two econometric models were designed and suggested. Each one attempts to forecast the prediction of new likes and WOM.

Finally, the visualization of the growth of the number of users on the brand’s social network page will be possible using the econometric model of social contagion called "bass diffusion". The results are presented graphically.
3.3.3. Results and Findings

- Hypothesis test

A Granger causality test (1969), or more correctly perhaps, Granger non-causality tests, was used to determine the existence of a relationship between the endogenous variables WOM and likes on the brand’s page on Facebook. According to this test knowing the history of a variable X helps explain a variable Y, beyond Y’s own history (Trustov et. al, 2009). Before conducting the Granger causality test it was necessary to perform a correlation test that confirmed the existence of a positive but small correlation (or endogeneity) between both variables (Table 65).

Table 65: Correlation test between the variables WOM and Likes.

<table>
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<th>WOM</th>
<th>Likes</th>
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<tr>
<td>Likes</td>
<td>0.2811</td>
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The findings from the Granger causality test (Table 66) shows that the variable WOM Granger-cause “likes”, and we can accept the null hypothesis that “likes” does not Granger cause WOM. Therefore, it can be stated that there is endogeneity among new likes and WOM referrals, and WOM can be used to predict likes.

Table 66: Granger causality Wald tests between the variables WOM and Likes.

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<th>Df</th>
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<td>0.289</td>
</tr>
<tr>
<td>WOM</td>
<td>All</td>
<td>2.4821</td>
<td>2</td>
<td>0.289</td>
</tr>
</tbody>
</table>

When creating a simple regression with both variables, the findings show that it is
possible to reject the H0 of no relation between the response and predictor variables. Nevertheless, we should bear in mind that the R-squared results revealed that the predictors only explain 8% of the variance of the response. This means that other variables may also explain the outcome. The coefficient of determination, denoted as R-squared ($R^2$) is a statistic that gives some information about the goodness of fit of a model. An $R^2$ of 1 indicates that the regression line perfectly fits the data.

Table: 67, 68 and 69: Regression of likes with WOM.

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<td>148595.157</td>
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<tr>
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<td>158653.924</td>
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<table>
<thead>
<tr>
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<th>Std. Error</th>
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<th>P &gt;</th>
<th>95% Conf. Interval</th>
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<td>2.25</td>
<td>0.028</td>
<td>.0088915 – .1519173</td>
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<td>7.48</td>
<td>0.000</td>
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</table>

- Testing other variables:

In order to better understand the behavior of the population regarding the generation of new likes and referrals on Facebook other variables were included into this analysis. Specifically,

- **Number of friends of brand’s followers**: number of people who are friends with people who liked the brand’s page (estimated).
- **Number of engaged users:** number of people who engaged with the brand’s page on Facebook. Engagement includes any click or story created.

- **Brand activity reach:** number of people who have seen any content on the brand’s page. These can be people who have liked the page and people who haven’t.

- The **reach of paid communication/advertising** on Facebook: number of people who saw a Sponsored Story or advert pointing to the brand’s page.

- **Viral reach:** number of people who saw the brand’s page or one of its posts from a story shared by a Friend. These stories include liking the page, posting to the page's timeline, liking, commenting on or sharing one of the brand’s page posts, answering a question, responding to one of the brand’s events, mentioning the page, tagging the page in a photo or checking in at the brand’s location.

- **Brand activity posts:** number of posts posted by the brand.

- **Number of promoters:** number of people sharing stories about the brand’s page.

The correlation matrix between all variables shows that there is a significant positive relation between the variables “likes” (i.e. new likes) and the number of friends of brand’s followers, advertising reach, past likes, and past advertising reach. Moreover, there is also a positive and significant relation between WOM (i.e. the number of referrals) and the number of engaged users and viral reach. Curiously, there is a negative relation between WOM and brand activity. Finally, the statistical test also reveals a relation between advertising reach and the number of friends of fans and likes, suggesting that advertising is reached by friends of current brand’ followers on Facebook, possibly leading to new likes.
Tables 70 – Correlation between the variables WOM, likes, number of friends, number of engaged users, brand activity reach, advertising reach, viral reach, past likes, brand posts, number of advocates, past WOM, past advertising reach, past brand posts, past number of engaged users, past viral reach.

<table>
<thead>
<tr>
<th></th>
<th>WOM</th>
<th>Likes</th>
<th>Number of friends</th>
<th>Number of engaged users</th>
<th>Brand activity reach</th>
<th>Advertising reach</th>
<th>Viral reach</th>
<th>Past likes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOM</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likes</td>
<td>0.2695</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of friends</td>
<td>0.3407</td>
<td>0.8553</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of engaged users</td>
<td>0.9098</td>
<td>0.3451</td>
<td>0.4124</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand activity reach</td>
<td>0.6595</td>
<td>0.2390</td>
<td>0.2725</td>
<td>0.8202</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising reach</td>
<td>0.3816</td>
<td>0.9022</td>
<td>0.8786</td>
<td>0.4592</td>
<td>0.2964</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viral reach</td>
<td>0.7285</td>
<td>0.5430</td>
<td>0.6991</td>
<td>0.7805</td>
<td>0.5426</td>
<td>0.6311</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Past likes</td>
<td>0.2840</td>
<td>0.8990</td>
<td>0.8669</td>
<td>0.3718</td>
<td>0.2754</td>
<td>0.8421</td>
<td>0.5407</td>
<td>1.0000</td>
</tr>
<tr>
<td>Brand posts</td>
<td>-0.0528</td>
<td>0.1911</td>
<td>0.1642</td>
<td>0.0085</td>
<td>0.1431</td>
<td>0.1891</td>
<td>0.0429</td>
<td>0.1932</td>
</tr>
<tr>
<td>Number of advocates</td>
<td>0.2186</td>
<td>0.4390</td>
<td>0.4084</td>
<td>0.2642</td>
<td>0.1833</td>
<td>0.3876</td>
<td>0.3871</td>
<td>0.4408</td>
</tr>
<tr>
<td>Past WOM</td>
<td>0.2255</td>
<td>0.3731</td>
<td>0.3504</td>
<td>0.3079</td>
<td>0.2862</td>
<td>0.4300</td>
<td>0.5454</td>
<td>0.2802</td>
</tr>
<tr>
<td>Past advertising reach</td>
<td>0.1995</td>
<td>0.9234</td>
<td>0.8764</td>
<td>0.2709</td>
<td>0.1656</td>
<td>0.9456</td>
<td>0.5218</td>
<td>0.9090</td>
</tr>
<tr>
<td>Past brand posts</td>
<td>0.4848</td>
<td>0.3149</td>
<td>0.2872</td>
<td>0.4586</td>
<td>0.4098</td>
<td>0.3518</td>
<td>0.5189</td>
<td>0.2523</td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>0.2602</td>
<td>0.4926</td>
<td>0.4383</td>
<td>0.3435</td>
<td>0.3090</td>
<td>0.5011</td>
<td>0.5963</td>
<td>0.3657</td>
</tr>
<tr>
<td>Past viral reach</td>
<td>0.3202</td>
<td>0.6424</td>
<td>0.7244</td>
<td>0.4452</td>
<td>0.3473</td>
<td>0.6726</td>
<td>0.8102</td>
<td>0.5571</td>
</tr>
<tr>
<td></td>
<td>Brand Posts</td>
<td>Number of advocates</td>
<td>Past WOM</td>
<td>Past advertising reach</td>
<td>Past brand posts</td>
<td>Past number of engaged users</td>
<td>Past viral reach</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------</td>
<td>---------------------</td>
<td>----------</td>
<td>-----------------------</td>
<td>-----------------</td>
<td>----------------------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>Brand posts</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of advocates</td>
<td>-0.0462</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past WOM</td>
<td>-0.0335</td>
<td>0.1541</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past advertising reach</td>
<td>0.1979</td>
<td>0.4304</td>
<td>0.3929</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past brand posts</td>
<td>-0.0948</td>
<td>0.1911</td>
<td>0.6632</td>
<td>0.3153</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>-0.0348</td>
<td>0.2530</td>
<td>0.9103</td>
<td>0.4845</td>
<td>0.8205</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past viral reach</td>
<td>0.1699</td>
<td>0.3448</td>
<td>0.7305</td>
<td>0.6475</td>
<td>0.5484</td>
<td>0.7875</td>
<td>1.0000</td>
<td></td>
</tr>
</tbody>
</table>

By knowing which variables are strongly associated with WOM and likes, we can then expect them to be statistically significant predictors of those variables. This relation is confirmed by applying a multiple regression model.

Regarding the outcome of the WOM (dependent variable) the final regression model suggests that 93% of the production of this variable can be explained by likes, number of engaged users, viral reach, previous likes, previous WOM, previous brand activity reach, previous number of engaged users, and previous viral reach.

This means that, although other variables are correlated with WOM, their impact is already included in other variables.

**First multiple regression of WOM with possible predictor variables:**

Tables 71, 72, and 73: Regression of WOM with likes, number of friends of fans, number of engaged users, brand activity reach, advertising reach, viral reach, past likes, brand posts, number of
advocators, past WOM, past advertising reach, past brand activity reach, past number of engaged users, past viral reach.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>107832460</td>
<td>14</td>
<td>7702318.57</td>
</tr>
<tr>
<td>Residual</td>
<td>7423694.14</td>
<td>45</td>
<td>164970.981</td>
</tr>
<tr>
<td>Total</td>
<td>115256154</td>
<td>59</td>
<td>1953494.14</td>
</tr>
</tbody>
</table>

| WOM                          | Coefficient | Std. Error | t     | P > |t|  | 95% Conf. Interval |
|------------------------------|-------------|------------|-------|-----|---|-------------------|
| Likes                        | 1.259469    | .4540923   | 2.77  | 0.008 | .3448796 | 2.174057 |
| Number of friends of fans    | .0000324    | .0003845   | 0.08  | 0.933 | -.000742 | .0008068 |
| Number of engaged users      | .3713253    | .0799196   | 4.65  | 0.000 | .2103589 | .5322916 |
| Brand activity reach         | -.0064654   | .0037448   | -1.73 | 0.091 | -.0140078 | .0010771 |
| Advertising reach             | -.0016274   | .0028991   | -0.56 | 0.577 | -.0074666 | .0042117 |
| Viral reach                  | .0250429    | .006129    | 4.09  | 0.000 | .0126983 | .0373874 |
| Past likes                   | -1.063458   | .5190649   | -2.05 | 0.046 | -2.108909 | -.0180081 |
| Brand posts                  | 50.65892    | 83.17048   | 0.61  | 0.546 | -116.855 | 218.1729  |
| Number of advocates          | -.0188628   | .0648409   | -0.29 | 0.772 | -.149459 | .1117334 |
| Past WOM                     | .2940642    | .1121491   | 2.62  | 0.012 | .0681844 | .5199441 |
| Past advertising reach       | .0015627    | .0033517   | 0.47  | 0.643 | -.005188  | .0083133  |
| Past brand activity reach    | .0224757    | .0040806   | 5.51  | 0.000 | .0142569  | .0306945  |
| Past number of engaged users | -.3609854   | .0928372   | -3.89 | 0.000 | -.547969  | -.1740017 |
Past viral reach | -.0176488 | .0053036 | -3.33 | 0.002 | -.0283308 | -.0069669
_cons | -1190.911 | 12616.48 | -0.09 | 0.925 | -26601.8 | 24219.98

| Number of obs | 60 | R-squared | 0.9356
| F (14,45) | 46.69 | Adjusted R-squared | 0.9156
| Prob > F | 0.0000 | Root MSE | 406.17

Second multiple regression of WOM with possible predictor variables:

Tables 74, 75, and 76: Regression of WOM with likes, number of engaged users, viral reach, past likes, past WOM, past advertising reach, past brand activity reach, past number of engaged users, past viral reach.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>107287860</td>
<td>8</td>
<td>13410982.5</td>
</tr>
<tr>
<td>Residual</td>
<td>7968294.24</td>
<td>51</td>
<td>156241.064</td>
</tr>
<tr>
<td>Total</td>
<td>115256154</td>
<td>59</td>
<td>1953494.14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WOM</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T</th>
<th>P &gt;</th>
<th>t</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likes</td>
<td>1.278276</td>
<td>.3571163</td>
<td>3.58</td>
<td>0.001</td>
<td>.561335</td>
<td>1.995217</td>
</tr>
<tr>
<td>Number of engaged users</td>
<td>.2667543</td>
<td>.0393446</td>
<td>6.78</td>
<td>0.000</td>
<td>.1877666</td>
<td>.3457419</td>
</tr>
<tr>
<td>Viral reach</td>
<td>.028629</td>
<td>.0047895</td>
<td>5.98</td>
<td>0.000</td>
<td>.0190137</td>
<td>.0382442</td>
</tr>
<tr>
<td>Past likes</td>
<td>-1.003365</td>
<td>.3185391</td>
<td>-3.15</td>
<td>0.003</td>
<td>-1.642859</td>
<td>-.3638716</td>
</tr>
<tr>
<td>Past WOM</td>
<td>.2871341</td>
<td>.1033085</td>
<td>2.78</td>
<td>0.008</td>
<td>.0797337</td>
<td>.4945345</td>
</tr>
<tr>
<td>Past brand activity reach</td>
<td>.0230587</td>
<td>.0038877</td>
<td>5.93</td>
<td>0.000</td>
<td>.0152537</td>
<td>.0308636</td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>-.3741515</td>
<td>.0871963</td>
<td>-4.29</td>
<td>0.000</td>
<td>-.5492054</td>
<td>-.1990976</td>
</tr>
<tr>
<td>Past viral</td>
<td>-.0185736</td>
<td>.0044822</td>
<td>-4.14</td>
<td>0.000</td>
<td>-.027572</td>
<td>-.0095753</td>
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</table>

185
<table>
<thead>
<tr>
<th>reach</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>-138.9852</td>
<td>123.9944</td>
<td>-1.12</td>
<td>0.268</td>
<td>-387.9142</td>
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</table>

<table>
<thead>
<tr>
<th>Number of obs</th>
<th>60</th>
<th>R-squared</th>
<th>0.9309</th>
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</thead>
<tbody>
<tr>
<td>F (14,45)</td>
<td>85.84</td>
<td>Adjusted R-squared</td>
<td>0.9200</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>0.0000</td>
<td>Root MSE</td>
<td>395.27</td>
</tr>
</tbody>
</table>

On the other hand, 90% of new likes (dependent variable) is explained by advertising reach, past new likes, past WOM, past number of engaged users, and past brand activity (independent variables). The findings also suggest that other variables, though correlated with the variable likes, are not significantly important to predict likes since their effect is already included in other variables. This fact is demonstrated at each regression, which leads to the final choice-set.

**First regression of likes with possible predictor variables:**

Tables 77, 78, and 79: Regression of likes with WOM, number of friends of fans, number of engaged users, brand activity reach, advertising reach, viral reach, past likes, brand posts, number of advocates, past WOM, past advertising reach, past brand activity reach, past number of engaged users, past viral reach.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>8535478.9</td>
<td>14</td>
<td>609677.064</td>
</tr>
<tr>
<td>Residual</td>
<td>683250.838</td>
<td>45</td>
<td>15183.3519</td>
</tr>
<tr>
<td>Total</td>
<td>9218729.73</td>
<td>59</td>
<td>156249.656</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Likes</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T</th>
<th>P &gt;</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOM</td>
<td>0.1159171</td>
<td>0.0417931</td>
<td>2.77</td>
<td>0.008</td>
<td>0.0317415 - 0.200926</td>
</tr>
<tr>
<td>Number of friends of fans</td>
<td>-0.0000052</td>
<td>0.0001166</td>
<td>0.04</td>
<td>0.966</td>
<td>-0.0002299 - 0.00024</td>
</tr>
<tr>
<td>Number of engaged</td>
<td>-0.0383926</td>
<td>0.0289327</td>
<td>-1.33</td>
<td>0.191</td>
<td>-0.096666 - 0.019808</td>
</tr>
<tr>
<td>users</td>
<td>Brand activity reach</td>
<td>Advertising reach</td>
<td>Viral reach</td>
<td>Past likes</td>
<td>Brand posts</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------</td>
<td>------------------</td>
<td>------------</td>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>.0005015</td>
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<td>0.000</td>
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<td>-.5.292971</td>
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<td>.0141419</td>
<td>.0195764</td>
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<td>0.474</td>
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<tr>
<td></td>
<td>-.1077388</td>
<td>.03281</td>
<td>-3.28</td>
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<td>.0010141</td>
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<td>.0014564</td>
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<td>0.004</td>
<td>-.0074063</td>
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<td>.1089507</td>
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<table>
<thead>
<tr>
<th>Number of obs</th>
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</thead>
<tbody>
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<tr>
<td>Prob &gt; F</td>
<td>0.0000</td>
<td>Root MSE</td>
<td>123.22</td>
</tr>
</tbody>
</table>

**Second regression of likes with possible predictor variables:**

Tables 80, 81, and 82: Regression of likes with WOM, number of friends of fans, number of engaged users, brand activity reach, advertising reach, viral reach, past likes, past WOM, past brand activity reach, past number of engaged users, past viral reach.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>8535478.9</td>
<td>14</td>
<td>609677.064</td>
</tr>
</tbody>
</table>
### Residual and Total Summaries

<table>
<thead>
<tr>
<th></th>
<th>Residual</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>683250.838</td>
<td>9218729.73</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>15183.3519</td>
<td>156249.656</td>
</tr>
</tbody>
</table>

### Regression Output

<table>
<thead>
<tr>
<th>Likes</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T</th>
<th>P &gt;</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOM</td>
<td>0.1142057</td>
<td>0.0406953</td>
<td>2.81</td>
<td>0.007</td>
<td>0.0323822 - 0.1960292</td>
</tr>
<tr>
<td>Number of friends of fans</td>
<td>0.0000156</td>
<td>0.0001096</td>
<td>0.14</td>
<td>0.887</td>
<td>-0.0002047 - 0.000236</td>
</tr>
<tr>
<td>Number of engaged users</td>
<td>-0.0300916</td>
<td>0.0252207</td>
<td>-1.19</td>
<td>0.239</td>
<td>-0.0808012 - 0.0206179</td>
</tr>
<tr>
<td>Brand activity reach</td>
<td>0.0003692</td>
<td>0.0010861</td>
<td>0.34</td>
<td>0.735</td>
<td>-0.0018145 - 0.0025528</td>
</tr>
<tr>
<td>Advertising reach</td>
<td>0.0014404</td>
<td>0.0003944</td>
<td>3.65</td>
<td>0.001</td>
<td>0.0006474 - 0.0022335</td>
</tr>
<tr>
<td>Viral reach</td>
<td>-0.0047708</td>
<td>0.0019817</td>
<td>-2.41</td>
<td>0.020</td>
<td>-0.0087552 - 0.0007863</td>
</tr>
<tr>
<td>Past likes</td>
<td>0.504908</td>
<td>0.0891299</td>
<td>5.66</td>
<td>0.000</td>
<td>0.3252832 - 0.6836984</td>
</tr>
<tr>
<td>Past WOM</td>
<td>-0.1087482</td>
<td>0.0311835</td>
<td>-3.49</td>
<td>0.001</td>
<td>-0.1714467 - 0.0460496</td>
</tr>
<tr>
<td>Past brand activity reach</td>
<td>-0.0046636</td>
<td>0.0014057</td>
<td>-3.32</td>
<td>0.002</td>
<td>-0.0074898 - 0.0018373</td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>0.1118335</td>
<td>0.0271951</td>
<td>4.11</td>
<td>0.000</td>
<td>0.0571541 - 0.1665128</td>
</tr>
<tr>
<td>Past viral reach</td>
<td>0.002852</td>
<td>0.0015776</td>
<td>1.81</td>
<td>0.077</td>
<td>-0.00032 - 0.006024</td>
</tr>
<tr>
<td>_cons</td>
<td>-393.76</td>
<td>3595.782</td>
<td>-0.11</td>
<td>0.913</td>
<td>-7623.565 - 6836.045</td>
</tr>
</tbody>
</table>

| Number of obs | 60    | R-squared | 0.9244 |
| F (11,48)     | 53.38 | Adjusted R-squared | 0.9071 |
| Prob > F      | 0.0000 | Root MSE | 120.47 |
Third regression of likes with possible predictor variables:

Tables 83, 84, and 85: Regression of likes with WOM, advertising reach, viral reach, past likes, past WOM, past brand activity reach, past number of engaged users.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>8435018.03</td>
<td>7</td>
<td>1205002.58</td>
</tr>
<tr>
<td>Residual</td>
<td>783711.703</td>
<td>52</td>
<td>15071.3789</td>
</tr>
<tr>
<td>Total</td>
<td>9218729.73</td>
<td>59</td>
<td>156249.656</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Likes</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T</th>
<th>P &gt;</th>
<th>t</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOM</td>
<td>.0397717</td>
<td>.024898</td>
<td>1.60</td>
<td>0.116</td>
<td>.0101897, .0897331</td>
<td></td>
</tr>
<tr>
<td>Advertising reach</td>
<td>.0016364</td>
<td>.0003212</td>
<td>5.09</td>
<td>0.000</td>
<td>.0009918, .002281</td>
<td></td>
</tr>
<tr>
<td>Viral reach</td>
<td>-.0024908</td>
<td>.001175</td>
<td>-2.12</td>
<td>0.039</td>
<td>-.0048486, -.0001329</td>
<td></td>
</tr>
<tr>
<td>Past likes</td>
<td>.4943997</td>
<td>.0772525</td>
<td>6.40</td>
<td>0.000</td>
<td>.3393811, .6494182</td>
<td></td>
</tr>
<tr>
<td>Past WOM</td>
<td>-.1007444</td>
<td>.0310961</td>
<td>-3.24</td>
<td>0.002</td>
<td>-.1631433, -.0383454</td>
<td></td>
</tr>
<tr>
<td>Past brand activity reach</td>
<td>-.0040238</td>
<td>.0013924</td>
<td>-2.89</td>
<td>0.006</td>
<td>-.0068177, -.0012298</td>
<td></td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>.1120804</td>
<td>.0270102</td>
<td>4.15</td>
<td>0.000</td>
<td>.0578804, .1662804</td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>118.2046</td>
<td>41.1866</td>
<td>2.87</td>
<td>0.006</td>
<td>35.55767, 200.8516</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of obs</th>
<th>60</th>
<th>R-squared</th>
<th>0.9150</th>
</tr>
</thead>
<tbody>
<tr>
<td>F (7,52)</td>
<td>79.95</td>
<td>Adjusted R-squared</td>
<td>0.9035</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>0.0000</td>
<td>Root MSE</td>
<td>122.77</td>
</tr>
</tbody>
</table>

Forth regression of likes with possible predictor variables:

Tables 86, 87, and 88: Regression of likes with advertising reach, viral reach, past likes, past WOM, past brand activity reach, past number of engaged users.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
</table>

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### Table 87: Regression of Likes with Possible Predictor Variables

| Likes                        | Coefficient | Std. Error | T      | P > |t| | 95% Conf. Interval |
|-----------------------------|-------------|------------|--------|-----|-----|-------------------|
| Advertising reach           | .0017421    | .0003189   | 5.46   | 0.000 |       | .0011025 to .0023818 |
| Viral reach                 | -.0010213   | .0007416   | -1.38  | 0.174 |       | -.0025088 to .0004663 |
| Past likes                  | .4692085    | .0767248   | 6.12   | 0.000 |       | .3153181 to .6230989 |
| Past WOM                    | -.0885517   | .0305829   | -2.90  | 0.005 |       | -.1498932 to -.0272103 |
| Past brand activity reach   | -.0024882   | .0010219   | -2.43  | 0.018 |       | -.004538 to -.0004385 |
| Past number of engaged users| .0859956    | .0218277   | 3.94   | 0.000 |       | .0422148 to .1297763 |
| _cons                       | 127.4736    | 41.36838   | 3.08   | 0.003 |       | 44.49918 to 210.4481 |

**Number of obs** 60  
**R-squared** 0.9108  
**F (6,53)** 90.21  
**Adjusted R-squared** 0.9007  
**Prob > F** 0.0000  
**Root MSE** 124.55

### Fifth and final regression of likes with possible predictor variables:

Tables 89, 90, and 91: Regression of likes with advertising reach, past likes, past WOM, past brand activity reach, past number of engaged users.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>8367145.82</td>
<td>5</td>
<td>1673429.16</td>
</tr>
<tr>
<td>Residual</td>
<td>851583.915</td>
<td>54</td>
<td>15770.0725</td>
</tr>
<tr>
<td>Total</td>
<td>9218729.73</td>
<td>59</td>
<td>156249.656</td>
</tr>
<tr>
<td>Likes</td>
<td>Coefficient</td>
<td>Std. Error</td>
<td>T</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>Advertising reach</td>
<td>.0016323</td>
<td>.0003113</td>
<td>5.24</td>
</tr>
<tr>
<td>Past likes</td>
<td>.4591277</td>
<td>.0770059</td>
<td>5.96</td>
</tr>
<tr>
<td>Past WOM</td>
<td>-.093648</td>
<td>.030609</td>
<td>-3.06</td>
</tr>
<tr>
<td>Past brand activity reach</td>
<td>-.0027326</td>
<td>.0010147</td>
<td>-2.69</td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>.0862461</td>
<td>.0220073</td>
<td>3.92</td>
</tr>
<tr>
<td>_cons</td>
<td>111.4912</td>
<td>40.03498</td>
<td>2.78</td>
</tr>
</tbody>
</table>

Number of obs 60  R-squared 0.9076  
F (5,54) 106.11  Adjusted R-squared 0.8991  
Prob > F 0.0000  Root MSE 125.58

After identifying the final predictor sets for each analyzed dependent variable a VAR model was performed to deepen the analysis of the relation between the variables.

- Vector Auto Regression Model:

To evaluate the type of relationship between these variables the vector auto regression model (VAR) was used. This econometric model is used to capture the evolution and the interdependencies of variables between multiple time series (Dekimpe and Hanssens, 1999) and can only be applied after determining the stationary of the data (and confirmation of the relationship between the variables). In other words, the VAR model is a system of equations estimated with a set of explanatory variables for all components of the equation.

In a VAR model each dependent variable is endogenous and is a linear function of its own past values, the past values of all other dependent variables, a set of exogenous variables, and an error term. In practical terms, a VAR model is used when the purpose is to show that a past variable influences a present variable and accounts for
different predictor variables as it is a vector. A regression, on the other hand, shows
a relation between variables from the same time period.

In order to receive consistent, reliable results, or direct analysis with a standard
stable VAR model the non-stationary data needs to be transformed into stationary
data. Specifically,

- If the non-stationary process is a random walk with or without a drift, it is
transformed to stationary process by differencing.

- if the time series data analyzed exhibits a deterministic trend, the spurious results
can be avoided by de-trending.

Sometimes the non-stationary series may combine a stochastic and deterministic
trend at the same time. To avoid obtaining misleading results, both differencing and
detrending should be applied, as differencing will remove the trend in the variance
and detrending will remove the deterministic trend.

As a result, to perform a VAR model it was necessary to first confirm the stationarity
of the variables, i.e., if they fluctuate temporarily around a fixed mean or trend, in a
time series, by using unit root tests, specifically the Dickey-Fuller test. This model
was recommended by Enders (1995) and Kwiatkowski et al. (1992) and it is the most
commonly applied unit-root test in practical applications.

The test statistic shows that the series data WOM referrals, brand activity reach, and
number of engaged users are stationary with 5% critical value. Viral reach does not
also have a unit root or stochastic trend, since it does not lie within the acceptance
region. Therefore, we can reject the null hypothesis of the presence of unit root or
non-stationarity, with 10% critical value. In sum, stationarity is assumed regarding
the predictable variables of WOM production. This means that there is a stochastic
process whose joint probability distribution does not change when shifted in time or
space, and parameters such as the mean and variance (if they exist) also do not
change over time or position:
\[
\begin{align*}
E(Y_t) &= \mu \\
\text{Var}(Y_t) &= \sigma^2 \\
\text{Cov}(Y_t, Y_{t-1}) &= \gamma_t
\end{align*}
\]

Table 92 – Dickey-Fuller test for unit root of the variable WOM.

Number of observations: 60

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>Z(t)</td>
<td>-6.089</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for Z (t) = 0.0000

Table 93 – Dickey-Fuller test for unit root of the variable brand activity reach.

Number of observations: 60

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>Z(t)</td>
<td>-4.956</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for Z (t) = 0.0000

Table 94 – Dickey-Fuller test for unit root of the variable number of engaged users.

Number of observations: 60

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>Z(t)</td>
<td>-5.424</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for Z (t) = 0.0000
Table 95 – Dickey-Fuller test for unit root of the variable viral reach.

Number of observations: 60

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>( Z(t) )</td>
<td>-2.672</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for \( Z(t) \) = 0.0790

On the other hand, the test statistic Dickey-Fuller shows that advertising reach and “likes” series have a unit root (that is a, stochastic trend), since they lie within the acceptance region. Therefore, they are non-stationary time series, which means that the moments of the stochastic process depend on time \( t \), and therefore the mean or variance changes with \( t \):

\[
\begin{align*}
E(Y_t) &= \mu(t) \\
\text{Var}(Y_t) &= \sigma^2(t) \\
\text{Cov}(Y_t, Y_{t-1}) &= \gamma_s(t)
\end{align*}
\]

Non-stationary behaviors can be trends, cycles, random walks, or combinations of the three. Non-stationary data, as a rule, are unpredictable and cannot be modeled or forecasted, since the results obtained by using non-stationary time series may be spurious in that they may indicate a relationship between two variables where one does not exist.

Table 96 – Dickey-Fuller test for unit root of the variable advertising reach.

Number of observations: 60

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>( Z(t) )</td>
<td>-1.172</td>
</tr>
</tbody>
</table>
MacKinnon approximate p-value for $Z(t)$ = 0.6853

Table 97 –Dickey-Fuller test for unit root of the variable likes.

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>$Z(t)$</td>
<td>-1.986</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for $Z(t)$ = 0.2928

The next step was to use an Augmented Dickey-Fuller (ADF) test and a regression with 2 lags to confirm the non-stationarity of the data. The ADF test is an augmented version of the Dickey–Fuller test for a larger and more complicated set of time series models (including lags). The results confirmed the non-stationarity of the data:

Table 98 –Dickey-Fuller test for unit root of the variable advertising reach, with two lags.

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>$Z(t)$</td>
<td>-1.116</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for $Z(t)$ = 0.7085

Table 99 –Dickey-Fuller test for unit root of the variable likes, with two lags.

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>$Z(t)$</td>
<td>-1.481</td>
</tr>
</tbody>
</table>
MacKinnon approximate p-value for Z (t) = 0.5427

Thereafter it was necessary to confirm with other Dickey-Fuller tests if the non-stationarity of the data was due to a trend or a drift. The findings reveal that in both cases we can accept the H0 of random walk with drift.

Table 100 –Dickey-Fuller test for unit root of the variable Advertising Reach, drift lags (0).

<table>
<thead>
<tr>
<th>Number of observations: 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Statistic</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Z(t)</td>
</tr>
</tbody>
</table>

p-value for Z (t) = 0.1229

Table 101 –Dickey-Fuller test for unit root of the variable likes, drift lags (0).

<table>
<thead>
<tr>
<th>Number of observations: 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Statistic</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Z(t)</td>
</tr>
</tbody>
</table>

p-value for Z (t) = 0.0259

The non-stationarity data was converted to stationary by first-differencing or losing one observation. The differencing process transforms the series into a new time series where the values are the differences between consecutive values. The first order differences are computed as:

\[ d^1_t = x_t - x_{t-1} \]
Table 102 – Augmented Dickey-Fuller test for unit root of the variable advertising reach D1, with two lags.

Number of observations: 57

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>Z(t)</td>
<td>-5.261</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for Z(t) = 0.0000

Table 103 – Augmented Dickey-Fuller test for unit root of the variable likes D1, with two lags.

Number of observations: 57

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Interpolated Dickey-Fuller</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1% Critical Value</td>
</tr>
<tr>
<td>Z(t)</td>
<td>-5.245</td>
</tr>
</tbody>
</table>

MacKinnon approximate p-value for Z(t) = 0.0000

A series that is stationary without any transformation is designated as I(0), or integrated of order 0. A series that has stationary first differences is designated I(1), or integrated of order 1.

When performing the VAR model, too many lags could increase the error in the forecast, but too few can leave out relevant information. In this case, the Akaike information criterion (AIC), the Schwarz’s Bayesian information criterion (SBIC) and the Hannan and Quinn information criterion (HQIC) can help in selecting the number of lags.

For the WOM analysis the VAR model was performed with two lags, as suggested by the AIC and HQIC procedures. For the likes analysis the VAR model was also performed with two lags. In this case, AIC, HQIC and SBIC did not agree with the
selection of the number of lags, therefore, two lags were chosen considering that it is preferable to have more lags than fewer.

Table 104: Selection-order criteria.

Number of observations: 56

Endogenous: WOM, brand activity reach, number of engaged users, viral reach, Likes D1

Exogenous: _cons

<table>
<thead>
<tr>
<th>Lag</th>
<th>Df</th>
<th>P</th>
<th>AIC</th>
<th>HQIC</th>
<th>SBIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>92.333</td>
<td>92.4031</td>
<td>92.5138</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>0.000</td>
<td>90.3466</td>
<td>90.7673</td>
<td>91.4316*</td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>0.000</td>
<td>89.9591*</td>
<td>90.7303*</td>
<td>91.9483</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>0.023</td>
<td>90.119</td>
<td>91.2408</td>
<td>93.0124</td>
</tr>
<tr>
<td>4</td>
<td>25</td>
<td>0.086</td>
<td>90.3849</td>
<td>91.8572</td>
<td>94.1824</td>
</tr>
</tbody>
</table>

Table 105: Vector Autoregression.

Log likelihood: -2625.198

Number of observations: 58

AIC: 91.55856   HQIC: 91.97369   SBIC: 92.6243

<table>
<thead>
<tr>
<th>Equation</th>
<th>Parms</th>
<th>RMSE</th>
<th>R-sq</th>
<th>Chi2</th>
<th>P&gt;CHI2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOM</td>
<td>6</td>
<td>1421.48</td>
<td>0.0588</td>
<td>3.621892</td>
<td>0.6050</td>
</tr>
<tr>
<td>Brand activity reach</td>
<td>6</td>
<td>29141.1</td>
<td>0.1558</td>
<td>10.7049</td>
<td>0.0576</td>
</tr>
<tr>
<td>Number of engaged users</td>
<td>6</td>
<td>2514.81</td>
<td>0.1371</td>
<td>9.213096</td>
<td>0.1009</td>
</tr>
<tr>
<td>Viral reach</td>
<td>6</td>
<td>24073.2</td>
<td>0.4500</td>
<td>47.44497</td>
<td>0.0000</td>
</tr>
<tr>
<td>Likes D1</td>
<td>6</td>
<td>162.472</td>
<td>0.2732</td>
<td>21.8059</td>
<td>0.0006</td>
</tr>
<tr>
<td>WOM</td>
<td>Coef.</td>
<td>Std Error</td>
<td>z</td>
<td>P&gt;CHI2</td>
<td>95% Conf. Interval</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------</td>
<td>--------</td>
<td>--------------------</td>
</tr>
<tr>
<td>WOM L2</td>
<td>-0.0648217</td>
<td>0.3272398</td>
<td>-0.20</td>
<td>0.843</td>
<td>-0.7061999 - 0.5765565</td>
</tr>
<tr>
<td>Brand activity reach L2</td>
<td>-0.060268</td>
<td>0.0112329</td>
<td>-0.54</td>
<td>0.592</td>
<td>-0.0280428 - 0.0159893</td>
</tr>
<tr>
<td>Number of engaged users L2</td>
<td>0.0709821</td>
<td>0.2602588</td>
<td>0.27</td>
<td>0.785</td>
<td>-0.4391158 - 0.58108</td>
</tr>
<tr>
<td>Viral reach L2</td>
<td>0.0102587</td>
<td>0.0093463</td>
<td>1.10</td>
<td>0.272</td>
<td>-0.0080597 - 0.028577</td>
</tr>
<tr>
<td>Likes D1 L2</td>
<td>0.4659657</td>
<td>0.9997219</td>
<td>0.47</td>
<td>0.641</td>
<td>-1.493453 - 2.425385</td>
</tr>
<tr>
<td>_cons</td>
<td>1277.772</td>
<td>376.0256</td>
<td>3.40</td>
<td>0.001</td>
<td>540.775 - 2014.768</td>
</tr>
</tbody>
</table>

Table 106: Selection-order criteria.

Number of observations: 56

Endogenous: Likes D1, Advertising Reach D1, WOM, number of engaged users, brand activity reach

Exogenous: _cons

<table>
<thead>
<tr>
<th>Lag</th>
<th>Df</th>
<th>P</th>
<th>AIC</th>
<th>HQIC</th>
<th>SBIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>92.9385</td>
<td>93.0086</td>
<td>93.1193*</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>0.000</td>
<td>92.0875</td>
<td>92.5082*</td>
<td>93.1725</td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>0.000</td>
<td>91.9114*</td>
<td>92.6826</td>
<td>93.9005</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>0.613</td>
<td>92.4043</td>
<td>93.5261</td>
<td>95.2977</td>
</tr>
<tr>
<td>4</td>
<td>25</td>
<td>0.006</td>
<td>92.4663</td>
<td>93.9386</td>
<td>96.2638</td>
</tr>
</tbody>
</table>

Table 107: Vector Autoregression.

Log likelihood: -2659.987

Number of observations: 58

AIC: 92.75816     HQIC: 93.17329     SBIC: 93.82391

<table>
<thead>
<tr>
<th>Equation</th>
<th>Parms</th>
<th>RMSE</th>
<th>R-sq</th>
<th>Chi2</th>
<th>P&gt;CHI2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOM</td>
<td>6</td>
<td>1421.48</td>
<td>0.0588</td>
<td>3.621892</td>
<td>0.6050</td>
</tr>
<tr>
<td>Brand activity reach</td>
<td>6</td>
<td>29141.1</td>
<td>0.1558</td>
<td>10.7049</td>
<td>0.0576</td>
</tr>
<tr>
<td>Number of engaged users</td>
<td>6</td>
<td>2514.81</td>
<td>0.1371</td>
<td>9.213096</td>
<td>0.1009</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---</td>
<td>---------</td>
<td>--------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>Viral reach</td>
<td>6</td>
<td>24073.2</td>
<td>0.4500</td>
<td>47.44497</td>
<td>0.0000</td>
</tr>
<tr>
<td>Likes D1</td>
<td>6</td>
<td>162.472</td>
<td>0.2732</td>
<td>21.8059</td>
<td>0.0006</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Likes D1</th>
<th>Coef.</th>
<th>Std Error</th>
<th>z</th>
<th>P&gt;CHI2</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likes D1 L2</td>
<td>-.5341663</td>
<td>.1262003</td>
<td>-4.23</td>
<td>0.000</td>
<td>-.7815142</td>
</tr>
<tr>
<td>Advertising reach D1 L2</td>
<td>.0011727</td>
<td>.000795</td>
<td>1.48</td>
<td>0.140</td>
<td>-.0003856</td>
</tr>
<tr>
<td>WOM L2</td>
<td>.0741871</td>
<td>.0368061</td>
<td>2.02</td>
<td>0.044</td>
<td>.0020485</td>
</tr>
<tr>
<td>Number of engaged users L2</td>
<td>-.0488532</td>
<td>.0268801</td>
<td>-1.82</td>
<td>0.069</td>
<td>-.1015373</td>
</tr>
<tr>
<td>Brand activity reach L2</td>
<td>.0013709</td>
<td>.0012307</td>
<td>1.11</td>
<td>0.265</td>
<td>-.0010412</td>
</tr>
<tr>
<td>_cons</td>
<td>1277.772</td>
<td>45.19376</td>
<td>0.68</td>
<td>0.495</td>
<td>540.775</td>
</tr>
</tbody>
</table>

- **Impulse Reaction Function**

With the purpose of ascertaining the measurement of how changing one variable affects others, in this case, over time, the next step of this study was to determine the elasticities of each independent variable of WOM and new likes.

The elasticity was calculated as follows: First, the coefficient of the independent variable with the outcome of the coefficient variable over time was added. Second, the result was multiplied with the mean of the dependent variable. Third, the result was divided by the mean of the independent variable. The formula used is:

\[(\beta_1 + t\beta_2) \frac{\pi}{\bar{y}}\]

<table>
<thead>
<tr>
<th>Shocks</th>
<th>One day</th>
<th>Four days</th>
<th>Seven days</th>
<th>Fifteen days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising reach</td>
<td>0.00002275608</td>
<td>0.00002596027</td>
<td>0.00002916445</td>
<td>0.00003770894</td>
</tr>
</tbody>
</table>

Table 108: Likes response to shocks.
Table 109: WOM response to shocks.

<table>
<thead>
<tr>
<th>Shocks</th>
<th>One day</th>
<th>Four days</th>
<th>Seven days</th>
<th>Fifteen days</th>
</tr>
</thead>
<tbody>
<tr>
<td>New likes</td>
<td>1.50023239263</td>
<td>1.6017204248</td>
<td>1.70320845697</td>
<td>1.97384320944</td>
</tr>
<tr>
<td>Number of engaged users</td>
<td>0.01762393096</td>
<td>0.04381822907</td>
<td>0.07001252717</td>
<td>0.13986398877</td>
</tr>
<tr>
<td>Viral reach</td>
<td>-0.00035440316</td>
<td>-0.0021792086</td>
<td>-0.00400401404</td>
<td>-0.00887016188</td>
</tr>
<tr>
<td>Previous WOM</td>
<td>0.39019325422</td>
<td>0.36046108601</td>
<td>0.3307289178</td>
<td>0.25144313591</td>
</tr>
<tr>
<td>Brand’s activity reach on Facebook</td>
<td>0.00031095181</td>
<td>0.00024115071</td>
<td>0.00017134961</td>
<td>-0.00001478663</td>
</tr>
<tr>
<td>Previous number of engaged users</td>
<td>0.04661964661</td>
<td>0.04643612916</td>
<td>0.04625261171</td>
<td>0.04576323183</td>
</tr>
<tr>
<td>Previous viral reach</td>
<td>0.00032863506</td>
<td>0.00027049032</td>
<td>0.00021234558</td>
<td>0.00005729295</td>
</tr>
</tbody>
</table>

- **Econometric models:**

For the Economics Glossary, econometric model is “formulated so that its parameters can be estimated if one makes the assumption that the model is correct”\(^{35}\). By establishing correlations between variables, one can make causal inferences (although correlation does not always translate into causations). To overcome possible “spurious” results, econometric modelers try to include all relevant variables through multiple regressions and then establish causal relations.

\(^{35}\)http://economics.about.com/cs/studentresources/f/econometrics.htm
Based on the previous findings, two econometric models were developed with the goal of helping social media managers to predict the number of new likes and WOM.

**a) Model for new likes:**

The outcome of multiple regressions have provide evidence that previous new likes, paid advertising reach, previous WOM, previous number of engaged users, and previous brand activity reach (independent variables) lead to new “likes” (dependent variable) on the brand’s Facebook page.

\[ \text{Likes}_t = \alpha + \beta_1 a_{t-1} + \beta_2 b_{t-1} + \beta_3 e_{t-1} + \beta_4 w_{t-1} + \beta_5 l_{t-1} + \epsilon \]

where (1)

- \( a \) = advertising reach: advertising on Facebook is expected to trigger interest for more information, expressed by likes,
- \( b_{t-1} \) = previous brand activity reach,
- \( e_{t-1} \) = previous number of engaged users: the more engaged users that are with a brand, the more buzz and attention they will produce and eventually attract new users,
- \( l_{t-1} \) = previous likes: social pressure, forbidden triad, imitation/learning process, and homophily are all phenomena that can explain why people tend to like the same things their friends like,
- \( w_{t-1} \) = previous WOM,
- \( \epsilon \) = error.
Figure 32: Modeling Approach for Likes.

**Calculus:**

To test the effectiveness of the model data from the first 59 days was used. The real number of likes for the 60 days is 1140 and the model predicted 1164 likes. As with any econometric model, 100% precision is almost impossible to achieve (the human behavior is not 100% predictable). Besides, the presented model is suitable for explaining 90% of the production of likes, as shown in the regression tables 89, 90, and 91), which explains the inclusion of epsilon (ε) in the equation.

**b) Model for WOM production:**

WOM (dependent variable) is a function of new likes, previous new likes, number of engaged users, viral reach, previous WOM, brand’s activity reach on Facebook, previous number of engaged users, and previous viral reach (independent variables).

\[
WOM_t = \alpha + \beta_1 l_t + \beta_2 l_{t-1} + \beta_3 e + \beta_4 v + \beta_5 w_{t-1} + \beta_6 b_t + \beta_7 e_{t-1} + \beta_8 v_{t-1} + \varepsilon
\]

where \( (2) \)

\( b \) = brand’s activity on Facebook reach: it is assumed that the more people brand’s activities reach, the more people will talk about it,

\( e \) = number of engaged users: users engaged with a brand produce buzz which in turn eventually generates more buzz through social influence,

\( e_{t-1} \) = previous number of engaged users: it is assumed that today’s buzz is
influenced by yesterday’s buzz,

\[ I \] = number of new likes: the more people who follow a brand, the more people will talk about it,

\[ I_{t-1} \] = previous number of new likes: previous new likes is assumed to lead to WOM in the future,

\[ v \] = viral reach: this variable is strongly related with the number of engaged users and assumes that nodes behavior will influence other nodes behavior, specifically their talks,

\[ v_{t-1} \] = previous viral reach: again, past behavior of some nodes is assumed to impact the present behavior of other nodes from the same social network,

\[ w_{t-1} \] = previous WOM referrals: similarly, past WOM is assumed to impact the present WOM,

\[ \varepsilon \] = error.

![Diagram](image)

Figure 33: Modeling Approach for WOM.

**Calculus:**

As was done with the previous model, the first 59 days from the data set were used to predict the number of WOM referrals on the 60th day. Once more, the predicted number (1291) is close to the real number (1396), attesting to the capacity of the model to predict 93% of the dependent variable (see tables 74, 75 and 76).
Endogeneity:

Described as the difficulty of guaranteeing the ceteris paribus assumption with social sciences findings, due to the sometimes-inevitable bias; endogeneity becomes one of the most major challenges in econometric analysis. It is typically caused by three circumstances: omitted variables, measurement error, or simultaneity.

When doing a regression (OLS) with cases that suffer from endogeneity the error term and the explanatory variables become correlated and the unobserved element (omitted variable) is hidden in the error.

\[ \text{Cov}(x_i, \epsilon_i) \neq 0 \]

Consequently, one can reject a hypothesis that in fact is true (Type I Error), or fail to reject a hypothesis that in fact is false (Type II Error).

To assess the presence of endogeneity a Hausman test was applied to both proposed models. The findings suggest no endogeneity on either model. In other words, the acceptance of the null hypothesis that random effects provides consistent estimates.

Table 110 – Endogeneity test to the New Likes Model.

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>(b) ivreg</th>
<th>(B)</th>
<th>(b-B) Difference</th>
<th>Sqrt (diag (V_b-V_B)) S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOM</td>
<td>-.0703308</td>
<td>.0048856</td>
<td>-.0752165</td>
<td>.0541367</td>
</tr>
<tr>
<td>Advertising reach</td>
<td>.0016297</td>
<td>.0016325</td>
<td>-2.85e-06</td>
<td>2.05e-06</td>
</tr>
<tr>
<td>Past likes</td>
<td>.5244578</td>
<td>.4545894</td>
<td>.0698683</td>
<td>.0502874</td>
</tr>
<tr>
<td>Past WOM</td>
<td>-.1121254</td>
<td>-.0923644</td>
<td>-.019761</td>
<td>.0142229</td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>.1001688</td>
<td>.085279</td>
<td>.0148899</td>
<td>.0107169</td>
</tr>
<tr>
<td>Past brand activity reach</td>
<td>-.0029413</td>
<td>-.0027182</td>
<td>-.0002231</td>
<td>.0001606</td>
</tr>
<tr>
<td>_cons</td>
<td>146.4887</td>
<td>109.06</td>
<td>37.4287</td>
<td>26.93914</td>
</tr>
</tbody>
</table>
\( b = \) consistent under Ho and Ha; obtained from ivreg

\( B = \) inconsistent under Ho, efficient under Ho; obtained from regress

Test: Ho: difference in coefficients not systematic

\[
\text{Chi2 (1) } = \frac{(b-B)[V_b-V_B]^{-1}}{(b-B)}
\]

\( = 1.93 \)

\( \text{Prob>chi2 } = 0.1647 \)

\((V_b-V_B \text{ is not positive definite})\)

Table 111 – Endogeneity test to the WOM model.

<table>
<thead>
<tr>
<th></th>
<th>Coefficients</th>
<th></th>
<th>(b-B) Difference</th>
<th>Sqrt (diag (V_b-V_B)) S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likes</td>
<td>-1.278276</td>
<td>-1.278276</td>
<td>1.65e-13</td>
<td>8.28e-08</td>
</tr>
<tr>
<td>Number of engaged users</td>
<td>.2667543</td>
<td>.2667543</td>
<td>-6.72e-15</td>
<td>23.84e-09</td>
</tr>
<tr>
<td>Viral reach</td>
<td>.028629</td>
<td>.028629</td>
<td>1.59e-15</td>
<td>9.33e-10</td>
</tr>
<tr>
<td>Past likes</td>
<td>-1.003365</td>
<td>-1.003365</td>
<td>-1.11e-13</td>
<td>6.10e-08</td>
</tr>
<tr>
<td>Past WOM</td>
<td>.2871341</td>
<td>.2871341</td>
<td>7.27e-15</td>
<td>5.59e-09</td>
</tr>
<tr>
<td>Past brand activity reach</td>
<td>.0230587</td>
<td>.0230587</td>
<td>-3.23e-16</td>
<td>.</td>
</tr>
<tr>
<td>Past number of engaged users</td>
<td>-.3741515</td>
<td>-.3741515</td>
<td>2.33e-15</td>
<td>.</td>
</tr>
<tr>
<td>_cons</td>
<td>-.0185736</td>
<td>-.0185736</td>
<td>-1.78e-15</td>
<td>1.04e-09</td>
</tr>
</tbody>
</table>

\( b = \) consistent under Ho and Ha; obtained from ivreg

\( B = \) inconsistent under Ho, efficient under Ho; obtained from regress

Test: Ho: difference in coefficients not systematic

\[
\text{Chi2 (8) } = \frac{(b-B)[V_b-V_B]^{-1}}{(b-B)}
\]

\( = 0.00 \)

\( \text{Prob>chi2 } = 1.0000 \)

206
(V_b-V_B is not positive definite)

- Bass Diffusion Model:

The visualization of the growing number of followers of the brand in the near future in the social network is possible using the econometric model social contagion, also called "Bass Diffusion".

The Bass Diffusion Model, developed by Frank Bass and published in the academic journal *Management Science*, in 1969, is a mathematical representation of the social process underlying innovation and social contagion. Selected in 2004 as one of the most influential papers in the 50-year history of Management Science, this model assumes that satisfied customers influence adoptions or sales of an innovation at a particular time.

A major limitation of the Bass model is that it does not incorporate marketing-mix variables, which restricts the model’s suitability for marketing planning. Besides, the number of eventual adopters can also change as a function of complementarities with different variables. In addition, this model does not assume that the number of adopters may change due to the increases or decreases of the overall population.

Nevertheless, the Bass model is still a very simple and practical model that allows a direct interpretation of parameters and comparisons with other situations, and can be used as the basis for other personalized variations of Bass models.

In this study, the nonlinear method to estimate the parameters of the Bass model to forecast the number of brand followers on Facebook was used.

The basic model, using discrete time notation, can be written as:

\[ x(t) = [p + q \left( \frac{X(t-1)}{m} \right)] [m - X(t-1)] \]

where (3)

\[ x(t) \quad = \text{the number of adoptions occurring in period } t, \]

\[ X(t-1) \quad = \text{the cumulative number of adoptions having occurred before period } t, \]
\( p \) = coefficient of innovation, capturing the intrinsic tendency to adopt as well as the effect of time invariant external influences,

\( q \) = coefficient of imitation or social contagion, capturing the extent to which the probability that one adopts (given that one has not done so yet) increases with the proportion of eventual adopters that has already adopted,

\( m \) = the number of eventual adopters

The collected data goes until the middle of 9\(^{th}\) week. After that period, the data was forecasted using the Bass diffusion model:

Table 112: Likes, Cumulative number of likes, and Cumulative number of likes\(^2\)

<table>
<thead>
<tr>
<th>Week</th>
<th>Likes</th>
<th>Cumulative number of likes</th>
<th>Cumulative number of likes(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>1418</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Week 2</td>
<td>3084</td>
<td>3084</td>
<td>9511056</td>
</tr>
<tr>
<td>Week 3</td>
<td>3228</td>
<td>6312</td>
<td>39841344</td>
</tr>
<tr>
<td>Week 4</td>
<td>3932</td>
<td>10244</td>
<td>104939536</td>
</tr>
<tr>
<td>Week 5</td>
<td>4883</td>
<td>15127</td>
<td>228826129</td>
</tr>
<tr>
<td>Week 6</td>
<td>6427</td>
<td>21554</td>
<td>464574916</td>
</tr>
<tr>
<td>Week 7</td>
<td>9208</td>
<td>30762</td>
<td>946300644</td>
</tr>
<tr>
<td>Week 8</td>
<td>7403</td>
<td>38165</td>
<td>1456567225</td>
</tr>
<tr>
<td>Week 9</td>
<td>7132</td>
<td>45297</td>
<td>2051818209</td>
</tr>
<tr>
<td>Week 10</td>
<td>7417</td>
<td>52714</td>
<td>2778765796</td>
</tr>
<tr>
<td>Week 11</td>
<td>7331</td>
<td>60045</td>
<td>3605402025</td>
</tr>
<tr>
<td>Week 12</td>
<td>6883</td>
<td>66928</td>
<td>4479357184</td>
</tr>
<tr>
<td>Week 13</td>
<td>6471</td>
<td>73399</td>
<td>5387413201</td>
</tr>
</tbody>
</table>
When comparing this result with the Rogers Diffusion of Innovation Curve (Figure 35) we can position the current adoption process of the brand’s page on Facebook at a late stage.

3.3.4. Conclusions and implications:

One conclusion that can be taken from these findings is that there is a positive but small correlation between WOM and new likes. However, the Granger-causality test and the regression test are not in the same line when it comes to determining what
kind of impact likes produce on WOM, since the first claims no causality relation, and the latter accepts it.

When determining which variables have direct impact on new likes production, past WOM seems to have more influence than present WOM. Social media managers should also be aware that other variables determine new likes, such as advertising reach, past new likes, past number of engaged users, and past brand activity reach.

On the other hand, the regression tests show that WOM is caused by new likes, number of engaged users, past new likes, past WOM, past brand activity reach, and past viral reach.

The findings from the impulse reaction function suggest that new likes impact and the number of engaged users on WOM increases over time. In addition, there is also a very small difference in the impact of previous number of engaged users in the first seven days. On the other hand, viral reach, previous WOM, brand’s activity reach on Facebook, and previous viral reach’s impact decreases over time. Viral reach is the variable with less impact on WOM.

Previous likes have bigger influence on new likes over time than the rest of the variables. It was also found that the impact of advertising reach on new likes increases over time. On the other hand, the impact of previous number of engaged users, previous WOM, and previous brand activity reach decreases over time.

Based on econometric and statistic findings, two econometric models were developed with the main purpose of helping social media managers to predict the number of new likes and WOM. According to the R-squared results, the econometric model used to estimate the number of new likes in the future is capable of capturing 93% of the dependent variable, and the WOM econometric model captures 90% of WOM production. No endogeneity concerns were found in either model.

Finally, a Bass diffusion model was applied to the collected data in order to get a visual and quantitative estimation of the adoption curve of the brand’s profile on Facebook.
3.3.5. Limitations and Suggestions

Further research could give new insights as to the determination if new likes causes WOM. However, one should be aware that each brand is singular which limits the generalization of results. Perhaps a replication of this study with more observations may provide the necessary data to solve this ambiguity.

Further, each proposed model should not be blindly applied to any brand that performs on Facebook, as each case requires a specific model and a precise selection of its components adapted to each case. In addition, the proposed models assume constancy, which means that any significante change regarding the independent variables should be followed by an individual adaptation of the model.

As to the presented Bass diffusion model, it should be noted that it was performed with data from a specific period of brand’s participation on the SNS. In practical terms it can be done, but theoretically it is incorrect, as the correct way is to use data from time 1, meaning, from the very first day of adoption of SNS from the brand.
**STUDY 4 - Eye tracking study**

The rapid growth of online advertising expenditures is expected to put online advertising ahead of other traditional media, especially printed newspapers and magazines ("eMarketer", 2012\(^{36}\)). Consequently, the Internet has become a preferred media for marketing and advertisements. For example, according to a recent study by "eMarketer", US online ad expenditures are expected to continue to grow, after reaching nearly $40 billion in 2012\(^{37}\).

However, the effectiveness of Internet advertising remains a controversial issue. For instance, continuously decreasing rates of click-through\(^{38}\) banner ads raise a question regarding Internet advertising effectiveness.

For an ad to work, the consumer must notice it, react to it, and even visit the website associated with the ad. In other words, when an ad is embedded within a medium, whether online or offline, it is expected to be able to monetize the associated costs by attracting people’s attention. Due to several studies with different findings, doubts have emerged in regard to whether users actually see ads. The majority of studies addressing this question are based on indirect evidence, such as direct memory tests (Pagendum and Schaumburg, 2001) or self-reporting measures (Cho and Cheon, 2004). Due to the lack of objective and unbiased criteria in these empirical observations, ad awareness and memorization remains ambiguous. As a result, the focus of Internet advertising research has shifted from consumers' attitudes to overall advertising effectiveness (Ha, 2008).

Following this need for further empirical and objective observations capable of assessing the effectiveness of advertising, this study aims to determine whether users of the online social network site Facebook actually look at the ads displayed, and examine the existence of the “banner blindness” phenomenon in this website. Furthermore, besides ascertaining the effectiveness of paid advertising, the current study also compares it with the number of friends’ recommendations seen (earned

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\(^{38}\) One index of the effectiveness of a banner ad is its click-through rate, a percentage calculated by dividing the number of times a banner ad appears on a site by the number of times the ad is clicked on.
advertising).

Consequently, the present chapter is structured as follows: First, the problem is defined and the proposed hypotheses are described. Second, the methods chosen and used in this study are explained and justified, followed by a description of the experimental process, and the participating sample. Third, the results are presented, specifically the number of banner ads displayed and seen, and the number of recommendations seen and clicked, both presented according to gender differences. Normality, correlation and Levene’s tests are then applied to the collected data. Fourth, the findings are discussed with regard to the testing of the hypotheses. Fifth, research limitations are identified, and several future research directions are discussed. Finally, this paper concludes with a summary of the findings and their implications.

3.4.1. Problem Definition

The exponential investment in online advertising and the disappointing results of click-through rates have led to shifting the spotlight from consumers’ attitudes to advertising effectiveness (Ha, 2008). Yet, there is still much that needs to be understood. Therefore, this work attempts to specifically address advertising effectiveness as it applies to social network sites (SNS).

SNS were created with the purpose of favoring social interactions, rather than becoming advertising platforms. For this reason, SNS users are expected to avoid information that is not related to their main objectives (the sharing and receiving of information with and from their social network), which includes online advertisements.

For advertisers, SNS are desired online places that bring together many users from around the world. Like any other mass media (such as TV, radio or the press), SNS can be used as advertisement platforms. However, SNS are not mass media, although the type of information they transfer can be the same - information and entertainment-oriented. The key difference is that in traditional mass media the source of information is impersonal. This raises the chances of the target’s
willingness to read advertisements, because the source is also informal. On the other hand, information shared in the SNS is essentially personal and the source of information belongs to the user’s social network.

Consequently, it is hypothesized that because SNS are online spaces created for social interaction, they are advertising spaces with low efficiency (i.e., with low values of click-through), despite the growing number of users worldwide. In other words, banner ads are the kind of information that users do not look for when they visit these online websites, reacting to these ads with banner blindness, since there is no ad congruency with the rest of the content.

For this reason, instead of investing in paid advertising, companies should invest in “earned advertising”, by identifying key consumers, such as influencers, and try to convert them into brand ambassadors, thus generating free organic publicity. Therefore, this study attempts to prove that regarding SNS, the key word for companies when it comes to advertising effectiveness is social influence, rather than advertising.

**Hypothesis 1: Online ads attract less attention levels than friends’ recommendations in SNS.**

SNS are entertainment websites composed mainly of short messages, photo and video content, requiring less cognitive resources and therefore favoring viewers’ attention on banner ads. Nevertheless, it is predicted that SNS will attract low attention rates, reinforcing the occurrence of the banner blindness phenomenon. This is most likely due to ads on the SNS Facebook being displayed outside the F-shaped pattern range, a finding discovered in the ability test conducted by the Nielsen Norman Group.

**Hypothesis 2: Since ads on Facebook are outside the F-shaped zone, low levels of attention to ads are predicted, reinforcing the occurrence of banner blindness.**
Auren Hoffman (2008) advocates that female online behavior is more focused on relationships than the online behavior of men. In other words, women spend more time on social network sites than men (with the exception of the popular business social network site LinkedIn), busying themselves with building relationships with existing and new friends. Furthermore, Lorigo et. al.’s (2006) study on information-seeking behavior shows a change in accordance with user gender.

Considering these two findings, one can expect that men and women will visually behave differently on the Facebook page. This difference in attention distribution is expected to ultimately impact banner visualization. Specifically, women are expected to focus more on the content published by their social network members than on banner ads, in relation to men, since women are expected to engage more with the content displayed by their social network members. This hypothesis is also supported by the Jumptap (2011) report in the context of mobile advertising, which states that women have click-through rates (CTR) of 0.31%, whereas men have CTRs of around 0.64%. A different study from Kenshoo Social and Resolution Media (2012), entitled “Social Media Insights: Men Are Cheap”, analyzed 65 billion Facebook ad impressions and 20 million ad clicks over a period of 12 months, and concluded that men are exposed to and click on more Facebook ads.

**Hypothesis 3: Women are expected to see fewer banners ads than men on SNS.**

**3.4.2. Methodology**

- **Experimental Description:**

The experiment had an average duration of up to 15 minutes per participant. During this period, 10 minutes were spent on calibration and actual experimentation, while the remaining 5 minutes were spent on answering a questionnaire to collect demographic information and consumption habits of the users on the analyzed website.
Initially, participants were asked to interact with their Facebook accounts as they would usually do, for two minutes. Next, they were asked to look for any brand of their choice on the site page and freely interact with it, for a period of one-and-a-half minutes. Next, users were invited to interact with the Nike sports brand page, within the SNS, for one-and-a-half minutes. This page was selected due to the fact that it had several videos and photo contents requiring less cognitive resources from users. At that time, before the introduction of Facebook Timeline, users could also find banner ads from other companies while browsing this page. Finally, users answered a questionnaire about the usage habits of the Facebook page.

The dependent variable in this experiment was the subjects’ attention to banner advertisements. Viewing duration typically includes various fixations and may include a relatively small amount of time of saccades between fixations. Fixations refers to the time in which the eyes are relatively fixed, absorbing or "decoding" the information, with an average duration of 218 milliseconds and a range of 66-416 milliseconds. On the other hand, saccades are an eye movement that occurs between fixations, typically lasting between 20 - 35 milliseconds: with only one minute of observation, it is possible to get sufficient information about the user’s visual behavior on the website.

It was decided to shorten the experiment time, since participants’ habits on Facebook are, in general, characterized by many daily short visits. Furthermore, by having a limited time period, participants were expected to prioritize their content visualization.

- Eye-Tracking:

According to the hypothesis of “strong eye-mind”, there is a connection consistent enough to draw objective conclusions about the cognitive processes that generate eye fixations. In other words, an eye movement is accompanied by a shift of attention (Shepherd, Findlay and Hockey, 1986), and the fixation duration could be a good indicator of the amount of attention that is paid to the object (Hollingworth, Henderson, 1998; Pieters and Wedel, 2004). Consequently, the measurement of eye
movements is an unavoidable tool for examining the focus of attention towards a certain ad and the duration of its processing (Hevert, Guerard, Tremblay and Chtourou, 2011). For this reason, the current research used an eye-tracking technology, specifically Eyelink 1000, which allowed for the tracking and recording of eye movements.

Many prior studies that analyzed the effectiveness of banner ads did not analyze eye movements. Instead, these studies were based on memory test performances or self-report procedures. As a result, attention was possibly paid to ads or participants actually saw them but, by the end of the experiment, participants could not remember the ads’ content. Thus, by using eye-tracking technology to measure users’ attention researchers get a better picture of what actually happens in reality, instead of basing their conclusions on retrospective think-aloud or the self-reported measures of fallible memories.

An eye-tracker works by directing a halogen light (which projects infrared light) onto the participant’s eye. Reflections of light from the participant’s eye are then translated by a computer into eye position coordinates. There are no risks or discomfort associated with the use of this technology, since this light level is comparable to what the eye would receive on a sunny day.

- Facebook:

The chosen web page for this experiment was the SNS Facebook, due to its increasing popularity (on December 31, 2011, Facebook users worldwide totalled 799,092,160 - data from http://www.internetworldstats.com/). In this website, users create personal profiles with photos and lists of interests. In addition, users can also exchange private and public messages with their social network. Data visualization can be confined to confirmed direct friends or expanded to include other Facebook members outside the personal network. The top two most-visited pages in this site are “The Wall” - a space dedicated to user profiles, which allows users and friends to post messages; and the “News Feed”, where posts can be seen each time they are
placed on the “The Wall” of social network members. The presence of paid advertising is confined to the right side of the web page, in a vertical column format. According to Webtrends (2011), the average click-through rate for Facebook ads in 2009 was 0.063% compared to 0.051% in 2010. The cost per click was $0.27 and $0.49 for those periods, respectively.

- Participants:

A total of 20 participants were used (10 female and 10 male), all students of the University of Texas at Austin, aged between 19 and 55 years, with an average age of 27 years old. The participants’ anonymity was assured during data collection by using ID numbers, rather than names, for identification purposes. Survey responses were equally anonymous.

Regarding the site consumption patterns of the selected sample, it is noteworthy that 60% of the participants reported using Facebook for more than 3 years, 75% said they visit the site every day and 50% said they spend less than 15 minutes on the site each time they log on.

3.4.3. Results and Findings

Among the 20 participants, 746 banner ads were encountered, but only 140 ads were actually viewed. This means that an average of 37 ads were displayed per sessions, only seven of which were intentionally observed by each participant (x=7 and s=4.4). The female group saw a total of 67 ads, which represents 21.5% of the banners displayed. The male group saw 73 ads, representing 16.7% of the banners displayed. The statistical estimators of ad-related variables from female and male datasets are displayed in Tables 113 and 114.
Table 113 – Statistical estimators of ad-related variables from female datasets.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Subjects</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ads Displayed</td>
<td>10</td>
<td>43.5</td>
<td>12.06694</td>
<td>26</td>
<td>67</td>
</tr>
<tr>
<td>Ads Seen</td>
<td>10</td>
<td>7.3</td>
<td>3.368151</td>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 114 – Statistical estimators of ad-related variables from male datasets.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Subjects</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ads Displayed</td>
<td>10</td>
<td>31.1</td>
<td>12.60908</td>
<td>15</td>
<td>51</td>
</tr>
<tr>
<td>Ads Seen</td>
<td>10</td>
<td>6.7</td>
<td>5.498485</td>
<td>0</td>
<td>16</td>
</tr>
</tbody>
</table>

In the first stage of this research, where participants navigated either on their personal page, called “The Wall”, or on the “News Feed” page, they encountered 254 banners, of which only 65 were seen and only 10% of participants (male and female) actually clicked on a banner and entered the advertised web page.

In this same phase, 60 recommendations published in the members’ pages of the SNS were observed (32 by females and 28 by males), as users read all the posts displayed at the top and the middle of the “News Feed” page, whether they were recommendations or not. What changed from post to post was the amount of attention, expressed by the duration of the user’s viewing time. In contrast, five recommendations “posts”, containing content promoting an organization or brand published by social network members on the “News Feed” page, were clicked on (Table 115).

In the second and third stages, participants had to perform search-browsing tasks. In other words, participants were asked to look for any brand of their choice and engage with the web page; next they were asked to visit the official Nike sports brand page. During this time participants were exposed to 30 ads, but only one ad was viewed.
Table 115 – Descriptive statistics of the variables recommendations seen and clicked by both genders.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Total</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendations Seen</td>
<td>20</td>
<td>60</td>
<td>3</td>
<td>3.111946</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Recommendations Clicked</td>
<td>20</td>
<td>5</td>
<td>0.25</td>
<td>0.5501196</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

To verify the normal distribution of the variables (ads displayed and ads seen) among the study participants, the Shapiro-Wilk test was applied, revealing that the results were normally distributed: the displayed ads variable had a $p=.596 > \alpha=0.05$, and the ads seen variable had a $p=.545 > \alpha=0.05$.

A Pearson correlation was computed to determine whether a relation exists between both variables. The results show that there is a positive, but small correlation, between ads displayed and ads seen (viewed), which is not statistically significant ($r=.18$, $p>0.05$).

- Hypotheses Tests

The number of clicks made for advertisements published in the form of peer recommendations was more than double, compared to ads posted on the advertising space. This is not surprising, given that participants read all the posts displayed at the top and middle of the “News Feed” page, whether they were recommendations or not.

On the other hand, the percentage of ads seen by participants on this website was small (21.5% of the ads seen by females and 16.7% seen by males), generating much less attention than friends’ recommendations, and thus supporting Hypothesis 1.

Confirmation of low levels of banner ad visualizations also supports Hypothesis 2 - specifically, that the fact that banner ads on the Facebook website are outside the range of the F-shaped zone may lead to the occurrence of banner blindness, and consequently, to low levels of attention to ads. Furthermore, the location of the banners on the site in question (at the top of the page, on the right side) was a
significant prediction of viewing. This supports the theory of Xavier Drèze and François-Xavier Husherr (2003) about the role of peripheral vision in avoiding banners and banner blindness.

Short-term banners are usually within the user’s field of observation, but as the user scrolls down the page, the ads are no longer in the viewing area, which may also contribute to their non-visualisation. Given the effects of the proliferation of traditional media ads on consumer’ ad avoidance (Zanot 1984), the large number of banner ads in the same SNS may also be responsible for their minimized effectiveness.

Based on these findings, one can also conclude that the overall effectiveness of advertising displayed on this SNS during the experiment was weak. It is also important to note that the success or failure of an advertisement is not solely due to its characteristics, even when the type of navigation is characterized by a lack of defined objectives (aimless browsing).

The survey findings also support the lack of interest towards ads by users. When asked about their opinions on ads appearing on the web page, 65% of participants expressed an attitude of indifference, which may explain the fact that 30% said they don’t click on ads. Nevertheless, 37% of users said they click on banners that catch their attention, even when they are not looking for a particular product or service.

Overall, online ads attract less attention than friends’ recommendations on Facebook and information in the form of a recommendation by social network members seems to generate more interest in users (and is perceived as more credible). Therefore, personal recommendations are more likely to be observed than commercial ads. Furthermore, banner ads are more likely to be ignored through the phenomenon of banner blindness because they do not appear in users’ visual “scanpath”.

Concerning Hypothesis 3, the findings reveal that women viewed more ads (a total of 21.5% of the displayed banners), than men (who saw a total of 16.7% of the displayed banners). A possible explanation for this finding is related to neuroscience findings explaining the fact that women have wider peripheral vision than men do. In
other words, women can see accurately, up close, about 45 degrees from the middle of their faces, both side to side, as well as up and down (Pease and Pease, 2000). It should also be noted that although women saw more ads than men, the number of ads clicked by women was equal to the number of ads clicked by men.

In order to analyze the data according to gender, a cross tabulation test was used to test the relation between the number of ads seen and not seen by gender (Table 116), the number of ads clicked and not clicked by gender (Tables 117) using the following formula:

$$\chi^2 = \sum \frac{(\text{observed} - \text{expected})^2}{\text{Expected}}$$

Table 116 – Chi-Square Tests of ads seen and not seen by gender.

<table>
<thead>
<tr>
<th></th>
<th>Ads seen</th>
<th>Ads not seen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Count</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>81.6</td>
</tr>
<tr>
<td>Male</td>
<td>Count</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>58.4</td>
</tr>
</tbody>
</table>

The result was $\chi^2 = 2.67$. Since the .05 “cutoff” for a significant $\chi^2$ with one degree of freedom is 3.84, it can be concluded that the difference is not significant. Therefore, we cannot reject the null hypothesis, which means that there is no association between the number of ads seen and gender. In addition, the p value (p=.101) strengthens this conclusion.
Table 117 – Chi-Square Tests of ads clicked and not clicked by gender.

<table>
<thead>
<tr>
<th></th>
<th>Ads clicked</th>
<th>Ads not clicked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Count</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>1.17</td>
</tr>
<tr>
<td>Male</td>
<td>Count</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>0.84</td>
</tr>
</tbody>
</table>

The result was $x^2 = 4.41$. Since the .05 “cutoff” for a significant $x^2$ with one degree of freedom is 3.84, it can be concluded that the difference is significant. Once again, we cannot reject the null hypothesis, which means that there is no association between the number of ads clicked and gender. The p value is .811.

Therefore, although neuroscience can explain why women have a wider visual area than men, allowing them to see more ads, statistically there is no difference in ads seen and clicked between women and men.

Finally, the large number of banners displayed during the experiment can be explained by the fact that each time the user goes to a different page within the site, the ad’s location changes or is replaced by another ad, which displays each ad for only a short period of time.

Table 118 – Relation between hypotheses, methods and results.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Online ads attract less attention levels than friends’ recommendations in SNS.</td>
<td>The hypothesis was supported, since the percentage of ads seen by participants on this website was small (21.5% by female users and 16.7% by male users), attracting less attention levels than friends’ recommendations.</td>
</tr>
<tr>
<td>H2: Since ads on Facebook are outside the range of the F-shaped zone, low levels of attention for ads are predicted, reinforcing the occurrence of banner blindness.</td>
<td>The hypothesis was supported, as the percentage of ads seen by participants on this website was small (21.5% by female users and 16.7% by male users).</td>
</tr>
<tr>
<td>H3: Women are expected to see fewer banners ads than</td>
<td>The hypothesis was not supported, since although women viewed more ads (a total of 21.5% of banners displayed), than men (who</td>
</tr>
</tbody>
</table>
3.4.5. Conclusions and Implications

In this specific experiment, the capacity of users to recall banners was not tested, as in the studies of Bachofer (1998) and Bayles (2000), but rather whether users would actually see the ads that appeared on a specific popular social network site (SNS). These results were then compared with the number of friends’ recommendations seen by the participants.

This research study revealed that in the SNS context, the indirect promotion of a product or service through the elements of a participant’s social network increases the interest (and, hence, the views) more effectively than via banner advertising. Besides, it was concluded that gender does not have an impact on the percentage of banner ads seen on SNS. In addition, the ads displayed on the SNS Facebook have a high probability of obtaining low profitability rates, since they compete with several ads in the same space, are present for only a short period of time and, given their predictable location, are likely to be ignored by social network users through the so-called phenomenon of banner blindness.

The first implications that can be drawn from the present work are that the proposed conceptualizations of the terms social network site and advertising can be used as platforms of discussion or as standards for future definitions.

Moreover, this study provides an opportunity to contribute to a greater knowledge of experiences based on the use of eye-tracking technology applied to advertising and communication.

From a managerial point of view, this study is expected to help brand managers and advertisers to guideline their strategic campaigns concerning the use of this type of website, which is very popular nowadays. In this sense, a few guiding principles are suggested:

An ad that is not observed by the target does not receive any attention and, consequently, cannot arouse interest, which means that it did not achieve its
objective. In order for a social media campaign focused on popular social network sites to be successful, it is crucial that companies know their target population and engage it. To make this happen, companies must be customer-focused, by promoting relationships and engaging their target in bidirectional conversations (one-to-one communications), which requires time together with creative, useful or interesting advertisements/content that promote scalable word of mouth.

Another important managerial implication taken from this article is the evidence that brands need to rethink their online advertising strategy. Recommendations or earned advertising should be the focus of an online campaign, specifically in a social network site. By adding a social component to their ads, advertisers could transfer the feelings of trust from a friend to the promoted message, thus legitimizing the ad. When using social media, the focus should not be on a "campaign mentality", which leads to the perception that social media is nothing more than another advertising platform. Instead, the optimal focus will target the ability to create experiences for consumers, thus adding value to the brand, and engaging in strategic and long-term thinking.

Furthermore, it is important to mention that women influence 91% of all home purchases\textsuperscript{39}, value word of mouth more than men and, as a result, engage in more of this type of communication\textsuperscript{40}. Taking this into account, women should be perceived as the most powerful brand ambassadors. Bearing in mind the current study findings - that statistically there is no difference in ads seen and clicked between women and men - marketers should find alternative ways to engage with women in online social networks. This would be better accomplished through bidirectional conversations and less via unidirectional methods, such as ads.

Finally, at the beginning of February 2013, Facebook began testing ads on “News Feed” page of non-fans of the advertised ad in the format of Page Post ads - a unit called “Suggested Page”, avoiding the traditional banner area on the same page. This fact strengthens the argument that banner ads on Facebook are not sufficiently effective, due to their predictable location, and possible marketers have already

\textsuperscript{39} The Female Economy, Harvard Business Review (September 2009).
\textsuperscript{40} Keller Fay’s Talktrack, 2012.
noticed this problem. Moreover, the addition of this feature also strengthens the argument that users pay much more attention to the News Feed area, where they find their friends’ posts. This new move from the Facebook team to keep attracting advertisers raises some questions: Will user experience be negatively affected (although these ads seem to be targeted to the user using standard Facebook capabilities, such as user’s location and number of Facebook friends who liked the advertised page)? If so what will the impact be? And finally, will these page post ads be efficient once users get used to them?

Even more recently, Facebook has tried to address the issue of advertising effectiveness by testing different banner sizes based on connectedness: “News Feed” ads coming from brands that users or their friends have liked will show up in large boxes; ads coming from pages that neither users nor their friends have liked will show up in smaller boxes. Once again, Facebook aims to draw users’ attention towards ads, in this case by manipulating the ads’ features. However, it is hypothesized that even if the predictable location effect does not impact users’ attention to banners, once they get used to the sizes change of the different banners, this factor (unless it is extreme) will have only a minimal impact, at best.

3.4.6. Limitations and Suggestions:

As with all studies, the current one has some limitations that should be considered. First of all, the sample type (undergraduate and graduate students) and the sample size (20 participants) inhibit the generalization of the findings to other populations. For further validation of the findings, it is necessary to include a larger (n>100) and non-student sample. Second, it was not possible to determine with precision how many friends’ recommendations appeared during the experimental period, since users do not check all their friends’ profile pages, and “The Wall” page does not display all of the shared information. Besides, at some point users stop scrolling down the Wall page, and automatically stop reading the information made public. Consequently, it is not possible to determine the exact percentage of recommendations read regarding their total number.
When this experiment was conducted, social advertisements (ads that are targeted based on underlying social networks) on Facebook did not yet exist. Therefore, it would be interesting to analyze the effectiveness of this type of ads on users’ attention using eye-tracking technology, and compare the results with posted recommendations. Another suggestion would be to use a survey to assess and compare the notoriety levels between banner ads and friends’ recommendations.

According to the previously mentioned theoretical explanations, during navigation without concrete objectives, it is expected that the participants’ attention will be attracted by ads’ features (graphic and/or content). Thus, an appealing ad (in regard to verbal and/or visual communication) is expected to attract users’ attention. However, these research findings revealed that the success or failure of an advertisement is not merely due to its characteristics, at least in the SNS context. Future research is needed to more clearly this hypothesis.

In conclusion, in order to complement this study, further analysis of visual attention measures is suggested, namely the duration of attention and of saccades’ (rapid eye movement) inter and intra elements (Pieters, Rosbergen, Wedel, 1999), supported by eye-tracking technology.
3.5. – STUDY 5: “tmn” Case Study

Nowadays, almost every organization desires to participate on social network sites (SNS), because they think that is where their actual or potential consumers are, and consequently they promote this online presence by adding their SNS URL on almost all of their communication pieces and channels.

However, when asked about the impact of their participation, questions arise: what to measure and how to measure it?

After all, why do organizations use SNS? Or better yet, do they know how to use them? Are SNS merely channels of information transmission? Or is this transmission a minor point? Or do they promote consumption?

When questioned about the reasons for why marketing and communication managers decided to use SNS, the three more popular answers were: because it is a low cost tool that favors brand exposition, it is a trend that allows the establishment of a relationship with their target, and they are a source of information and feedback.

Even though participants also reported that they use SNS because they are interested in testing the return generated by these new platforms compared to traditional media, only 50% recognized doing content analysis. In fact the majority of respondents uses quantitative methodologies to measure the results of their participation, such as the number of likes obtained, the number of comments and posts shared.

On the other hand, SNS are also popular for their ability to easily spread information among many users. Participants were asked if they ever used any marketing campaign to achieve viral word of mouth, to which 67% replied positively. To measure the effectiveness of their campaigns, respondents stated that they looked at sales growth, the number of likes obtained, comments, posts shared, visualizations, and qualitative analysis (specifically the type of valence of word of mouth).
3.5.1. Problem Definition

The main purposes of this study is to assess if a brand’s goals of participating on the SNS Facebook are actually being achieved and if SNS can also contribute to positive electronic word of mouth (WOM), which lead us to hypothesis 1 and 3:

(H1) Brands’ participation in social network sites with their existing customers produces beneficial changes in their relationship;

(H3) Brands’ participation in social network sites contributes to getting positive electronic "word of mouth" spread by the current brand clients that interact with it in social network sites.

3.5.2. Methodology

To test the veracity of these two hypotheses brand followers were contacted directly to hear their opinions about their relation with the brand.

Accordingly, an online survey was sent to the followers of the brand *tmn* on Facebook. 30 respondents compose the selected sample (by convenience), the majority being 26-35 years old, with 52% female and 48% male.

*tmn* is a Portuguese telecommunications company with presence on the online social network Facebook, as well as You Tube and Twitter. In May 2013 they had more than 778.000 followers.

3.5.3. Results and Findings

The findings from the survey revealed that 100% of *tmn* followers already knew the brand before joining the brand’s page on Facebook, and 89% were already clients. Curiously, 4% become client only after following the brand on this SNS.

Regarding the promotion of the brand’s page, the Internet (56%) and advertising (28%) seem to be the most efficient channels to inform clients about *tmn* Facebook page.
As for the reasons for following this brand, participants replied that it was to obtain further information (30%), to participate in a event, like a promotion or contest (26%), for professional reasons (19%), because their friends recommended it (11%), to get other benefits (7%), or for other reasons (7%).

The majority of participants admit to not to visiting the brand’s page (37%), or to do it once per month (30%). Only 4% visit every day and 11% more than once per week. In addition, 56% of participants that visit the brand’s page just read the brand’s posts and other followers’ comments (22%). Only 19% are active members of the page and add likes (15%) or comments (4%).

When analyzing the impact of following the brand *tmn* on Facebook on satisfaction, loyalty, trust, and consumption levels, the findings suggest that only satisfaction has improved (Figures 36).

![Figure 36: Ever since I follow the brand on Facebook, I am more satisfied with its products and services](image)

1. 4%
2. 25%
3. 52%
4. 19%

Figure 36: *Ever since I follow the brand on Facebook, I am more satisfied with its products and services* (1-totally disagree; 4-totally agree).

![Figure 37: Ever since I follow the brand on Facebook, I consume more the brand](image)

1. 4%
2. 22%
3. 33%
4. 41%

Figure 37: *Ever since I follow the brand on Facebook, I consume more the brand* (1-totally disagree; 4-totally agree).
Figure 38: *Ever since I follow the brand on Facebook, I am more loyal to the brand* (1-totally disagree; 4-totally agree).

Figure 39: *Ever since I follow the brand on Facebook, I think the brand is more trustable* (1-totally disagree; 4-totally agree).

Regarding brand’s image, brand followers consider that it changed for better ever since they follow the brand, as it is more transparent and more competent (Figures 41 and 42). Moreover, followers also agreed to know more about the brand’s services and products (Figure 43).
Figure 40: Ever since I follow the brand on Facebook, brand’s image has changed for better (1-totally disagree; 4-totally agree).

Figure 41: Ever since I follow the brand on Facebook, the brand is more transparent (1-totally disagree; 4-totally agree).

Figure 42: Ever since I follow the brand on Facebook, the brand is more competent (1-totally disagree; 4-totally agree).

Figure 43: Ever since I follow the brand on Facebook, I know more about the brand’s services and products (1-totally disagree; 4-totally agree).

As to the brand’s relationship, the majority of tmn followers believe that the brand cares about having a relationship with them, is more accessible, and listens more.
When it comes to recommending the brand, 48% of participants answered they have done it even before following the brand on Facebook, 11% before and after, and only 4% after following it. Whether they have already recommended the brand’s page, the majority answered no (74%), 19% said they did it online, and 7% offline.
Friends are the number one group to whom participants recommended the brand (107%), followed by family and colleagues (50% each)\(^{41}\).

In relation to the valence of the content shared, 93% answered it was positive, and 7% it was negative, and the channel used was using SNS (xx%). Face-to-face conversations (40%) and email (20%) are the second and third preferable communication channels.

Finally, \textit{tmn} followers answered to be more likely to share brand’s posts spontaneously if they are entertaining, and if they are asked to do it, if the posts are about brand’s services and products. As for promotions or contests posts, both scenarios have the same influence on participant decision to share them.

Table 119: Willingness to share brands' posts.

<table>
<thead>
<tr>
<th></th>
<th>Spontaneously</th>
<th>Only if asked</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotions or contests</td>
<td>44%</td>
<td>44%</td>
<td>12%</td>
</tr>
<tr>
<td>Information about brand's products/services</td>
<td>30%</td>
<td>48%</td>
<td>22%</td>
</tr>
<tr>
<td>Entertaining content</td>
<td>48%</td>
<td>33%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Table 120: Receptors of the brands' posts.

<table>
<thead>
<tr>
<th></th>
<th>Promotions or contests</th>
<th>Information about brand's products/services</th>
<th>Information about brand's products/services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends</td>
<td>85%</td>
<td>70%</td>
<td>78%</td>
</tr>
<tr>
<td>Family</td>
<td>44%</td>
<td>56%</td>
<td>41%</td>
</tr>
<tr>
<td>Colleagues</td>
<td>17%</td>
<td>30%</td>
<td>37%</td>
</tr>
<tr>
<td>Blogs/Forums</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>No one</td>
<td>11%</td>
<td>22%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Note: Participants were able to select more than one option, so the percentages may be up to 100%.

\(^{41}\) Participants were allowed to choose more than one option, so percentages may add up to more than 100%
- Hypothesis test

Regarding the first hypothesis, the findings suggest that following the brand on Facebook have impacted positively the brand image and followers satisfaction towards brand’s products and services. In addition, participants recognize that the brand is interested in establishing a relation with them, become more accessible, and listen more. Nonetheless, participants also answered that they are not more loyal, they do not consume more, nor they trust more the brand.

Moreover, despite the positive changes, brand’s participation on Facebook did not seem to affect much participant’s willingness to recommend the brand, since only 15% admitted having done it after following the brand. Moreover, before following the brand on Facebook they already felt sufficiently engaged with the brand to recommend it to their contacts, preferably through social network sites.

3.5.4. Conclusions and implications:

The low levels of recommendation after following the brand on Facebook can be due to the lack of involvement with the brand’s page, since the majority does not visit the page, and those who does it (and not frequently), don’t participate on it.

Despite the fact that brand’s participation on Facebook has benefited its image and clients satisfaction (which can explain the prevalence of positive WOM), it cannot be stated that in this particular case the brand had a strong impact on its followers, since key factors such as trust, loyalty, and consumption were not improved.

The findings also revealed that the majority of brand followers are consumers who want to be more informed about its products and services, and only 4% started consuming the brand after following it. These are key findings, since by knowing the reasons why consumers follow the brand and the impact their participation has on strategic factors such as consumption, companies can better create their content and goals to followers needs.
Finally, it was interesting to notice that the type of content of brands’ posts can determine followers’ willingness to share them (whether spontaneously or not), yet even tough the recommendation levels were low, they do not pose the hypothesis of not recommending, specially to their friends.

3.5.6. Limitations and suggestions

Because each brand manages its Facebook brand differently in comparison to other brands, the impact of one brand on follower’s behavior is necessarily different than the impact of a different brand. Consequently, these findings should be generalized to other brands.

Moreover, since it was only analyzed the impact of Facebook on brand/consumer relation through the consumer perspective, it is not possible to ascertain if the lack of interest to participate on the brand’s page is due to the brand’s inability to promote engagement. Therefore, it is suggested that this type of approach should consider both sides.
Chapter IV – Conclusions

The way an individual is connected with the social network (meaning, the structure and his position in the network), as well as his behavior, can be determined to influence the spread of information. However, with the emergence of SNS, the spread of information, more specifically the phenomenon of word of mouth (WOM), became easier and its impact was amplified.

Aware of this change, companies have focused on viral marketing activities that promote the spread of information on SNS by their consumers. However, this “fertilized” WOM is not expected to have the same impact as the organic WOM. SNS have also been used as online advertising spaces, but attention issues on the Internet have shown that “banner blindness” can occur in these online spaces.

From the user or consumer perspective, SNS are an attractive online space for sociological, psychological, and biological reasons. Moreover, brand profile pages on SNS, such as Facebook, can be seen as online communities, where brand-centric friendship can be developed with six possible functions.

This relation between brands and followers on SNS inevitably influences the perception of brand equity. To measure this impact, four constructs were suggested: brand awareness, brand image, brand loyalty, and brand relationship. The suggested brand equity measurement from the consumer perspective aims to include a holistic perspective of the process of brand equity, specifically the connection between the social network and the brand perception and relationship between brand and user.

4.1 Hypotheses Tests and Achieved Objectives

The main purpose of this dissertation was to understand the impact of brands’ participation on online social networks to their brand equity. In order to address this research topic, five hypotheses were developed and tested. They were:

(H1) Users of online social network sites that interact with the brand on these websites show greater knowledge about the brand, as well as higher levels of trust,
loyalty and satisfaction (i.e., more positive brand equity) than users who do not follow the brand;

(H2) Brands’ participation in social network sites with their existing customers produces beneficial changes in their relationship;

(H3) Brands’ participation in social network sites contributes to the spread of positive "word of mouth" by the current brand’ clients that interact with it in social network sites;

(H4) positive "word of mouth" contributes to getting new users who will interact with the brand on the social network site;

(H5) Because they are online spaces of interaction, online social network sites are advertising spaces with low efficiency (i.e., with low values of click-through).

The findings from study 1 have shown that consumers that follow the brand on the social network site (SNS) Facebook, consumers that use that SNS but do not follow the brand, and consumers that are not users all have different brand equity results and therefore, behave differently towards the brand. More precisely, brand followers have better brand equity results than the other two groups. Curiously, it was also found that non-followers and non-facebook users respond similarly in different brand equity categories and non-Facebook users had the worst brand equity results.

If, on one hand, the findings from study 1 have shown that brand equity followers have better brand equity results than other consumers that do not follow the brand (confirming hypothesis 1), then on the other hand, these findings do not provide enough information to determine if SNS impacted brand equity results or if brand followers already had a better brand equity perception before following it.

This confirmation was obtained with study 5, which in turn also confirmed hypothesis 2, meaning, brands’ participation on SNS benefits the brand relationship with their target. Accordingly, in the analyzed case, following the brand on Facebook did positively impact brand image and satisfaction. However, it did not influence
trust, loyalty, and consumption levels. In fact, only 4% of participants started consuming the brand after following it on the SNS.

Moreover, although the main reason why participants started following the brand was to be informed, the majority do not visit the Facebook profile page, and those that do, only lurk (56%). However, it should be noted that, as mentioned in chapter 2.3, just because they lurk, that does not mean that they are passive members (as in opposite to active members). In fact, the majority are active lurkers (or non-public participants), since 63% have already recommended the brand. Curiously, this behavior is not promoted by the expected engagement between the brand and the follower (since they do not even engage with it), as participants state that they have already recommended the brand before following it.

The confirmation of hypothesis 3, that is, that brands’ participation in SNS contributes to positive “word of mouth”, came from the findings of studies 2 and 3. Despite the fact that brands have a defensive posture towards followers comments, and fail overall to promote engagement, not only do brand followers share brands’ posts, but their friends also share these posts, whether they follow the brand or not.

Study 2 has also shown that profile pages on Facebook are like brand communities, where followers interact with each other and with the brand. Therefore, SNS should be seen as online spaces with two functions: from an individual perspective they are spaces where users can interact with their social network and transfer their private life to the public sphere in different degrees. From a consumer perspective, SNS are also brand community spaces, where the boundaries between these two functions are blurred, which makes it easier and quicker for a follower or community member to extrapolate the impact to others, influencing their brand perception. From a brand perspective, SNS like Facebook are a good measurement tool for evaluating the evolution of marketing relationship strategies and activities.

According to the findings from study 3, there is a positive but small correlation between WOM and new likes (confirming hypothesis 4). More specifically, past WOM seems to have more impact than present WOM on the production of new likes. Moreover, new likes also seem to be an outcome of advertising reach, past new likes, past number of engaged users, and past brand activity reach. In addition,
the impulse function reaction tests suggest that previous likes have a bigger
influence on new likes over time than any other variable, and the impact of
advertising reach on new likes increases over time.

On the other hand, WOM is caused by new likes, number of engaged users, past new
likes, past WOM, past brand activity reach, and past viral reach. The impulse function
reaction tests suggest that the impact of new likes and number of engaged users on
WOM increases over time. Curiously, viral reach is the variable with the least impact
on WOM production.

The bass diffusion model was applied to the collected data in order to get a visual
and quantitative estimation of the adoption curve of the brand’s profile curve on
Facebook, which helped to identify the current stage of the adoption process
according to the Rogers Diffusion of Innovation Curve.

Finally, study 4 confirmed hypothesis 5 by showing that recommendation posts from
users are more efficient than banner ads – the number of clicks made on
recommendation posts were more than double that of ads posted in advertising
spaces; and participants saw only 16% to 21% of banner ads. In other words, posts
from friends gather more attention levels than banners ads, especially if they are
displayed at the top and middle of the “News Feed”. Furthermore, users can easily
ignore banner ads on Facebook because they do not appear in their visual
“scanpath” being outside the range of the F-shapped zone and predictably located,
which leads to the occurrence of the phenomenon of banner blindness.

Even though on the survey participants identified indifferent towards ads, Facebook
users admit to clicking on banners if their attention is caught by them, even when
they are not looking for a particular product or service.

4.2 Conclusions and Implications

Having a profile page on Facebook or a web page (or website) serve different
purposes, so to ask which one has more impact on a web marketing strategy is a
hard question to answer. If a company intends to use the Web as a platform to
conduct business, then a web page is unquestionably essential. If the company
already holds a comfortable or competitive market share, having a Facebook page can be seen as a post-service that will add value to the brand and help distinguish them from the rest of the competition.

In my view, companies should first focus on getting a simple and well-structured web page, and only then embark on developing social media tools, such as Facebook, since web pages can serve different audiences (business-to-consumer and business-to-business), can be more informative than SNS, and allows the control of what is published. Finally, not all people have a Facebook account, immediately limiting the range of the target audience. In fact, in 2012 only half of the world’s Internet users used Facebook. Moreover, when Internet users browse for a brand, it seems more likely to expect them to visit the brand Website, rather than its Facebook page. In other words, the direction of the traffic can also be more predominant than the increase of the size of the possible traffic. A study looking at where web page traffic comes from might be needed to confirm this suggestion.

The main advantage of a brand having a SNS page is the possibility of interaction between the brand and its followers, which can in turn lead to engagement. Hence, SNS have risen as a solution for companies interested in implementing a relationship marketing strategy.

However, despite all the recognized benefits, the findings from the five-presented studies suggest that some brands have not been exploring the full potential of the SNS Facebook. For instance, even though consumers are willing to engage with brands, the latter fail to promote engagement and use SNS merely as an informative channel. Perhaps this occurs because brands do not feel ready to engage in a relationship with consumers, or perhaps they do not even know how to begin doing so.

As has been shown in this work, brands win when their consumers are engaged, for they act as brand advocates by recommending the brand products or services to their friends, who in turn also make recommendations to their friends (earned advertising).

42 http://www.pcmag.com/article2/0,2817,2399732,00.asp
For that to happen, companies should bear in mind that it is not enough for consumers to merely like or follow their brand. Rather, they have to give them reasons to visit the brand profile page and interact with it/them, otherwise the “likes” have little value. Companies should also be customer-focused, that is, they should know their target well, which can be achieved by talking and listening to them, and by acting in accordance with the information gathered.

Social media is not another advertising platform, therefore companies should avoid the “campaign mentality” when using it. Instead, they are useful instruments that can add value to a brand whenever companies are willing and committed to engage in strategic and long-term thinking/relationships.

The findings from this research also support the assumption that the content of a website is not equally perceived, since the location can determine the levels of attention given to it. Moreover, users behave differently whether they are browsing goal-oriented, or not (aimless browsing). This can help brands to determine the type of posts they publish, as they are determinant to define the use followers make of their Facebook page. In addition, social media managers should also understand that brand followers should not be treated equally, as they do not act equally, and consequently, they do not have the same value.

Still concerning the SNS users, it is important to understand that not only consumers can follow the brand activity. Stakeholders are also aware of the brand’s activity and, consumers’ perceptions about the brand and can therefore be influenced by what they see.

Finally, social media managers should give more attention to female users of SNS and engage with them in bidirectional conversations. This is because females compose an attractive group for brands for a number of reasons. First, their wider peripheral vision allows them to see more ads than men; second, because they are more likely to use SNS, such as Facebook, they talk more about their purchases than men; third, they influence 91% of all home purchases; fourth, they value word of mouth more than men and finally; fifth, they engage more in SNS.
These days there is still a common misunderstanding supporting the idea that to have a site in social media is merely to have a presence on a popular website where a large number of users converge. Nothing could be further from the truth. Social media is not about technology, but about people. It’s about building relationships with your target audience and being able to meet the needs of both.

It is important not to confuse connection with relationship. Brands and consumers/clients can be connected to the same channel and yet not have any kind of relationship. Relationships are not an immediate and spontaneous outcome of brand presence in SNS. Establishing relationships with customers is much more than merely aspiring to a precise number of likes, friends, followers or fans.

Engagement is the key word, and for that brands first need to know their audience, how they behave, what they like, and what they expect from brands. To meet this challenge, it is essential to "hear" the audience. As brands start to hear them, soon they will be in the same line/ singing the same tune.

Thus, the key to success lies in how to use the knowledge gained from listening, which means that data mining, supported by new technology, becomes crucial. At the moment a brand can achieve engagement with its audience, it can then get the desired relationship. But remember that relationships are not static - they evolve and it takes work to maintain them.

As for the implications of the study, during the development of this work there was a constant concern to get both academic and managerial contributions. First of all, in this work the reader can find a consumer-based brand equity proposal model that encompasses most of the accepted assumptions in the literature, while also adding new ones. Second, a consumer-based brand equity scale was proposed and, validated statistically, which allows for the separate assessment of the different constructs that compose the suggested model. Third, two econometric models were developed to help social media managers predict the number of new likes and WOM. The R² results of these two models are above 90%, which supports the interest to use them. Forth, the proposed conceptualizations of the terms “social network site” and “advertising” can be used as platforms of discussion or as standards for future definitions. Fifth, a categorization of six follower profiles was
suggested, that could be used by companies to distinguish their followers and act toward them. Sixth, this study fulfils some identified needs to study advertising effectiveness based on empirical data and to assess banner blindness in other contexts, representative of current Internet users’ habits. Seventh, this work also contributes to the promotion of eye tracking technology as a research method in social sciences. Eighth, by focusing on consumer behavior towards brands on SNS, this study attempts to contribute to the theoretical knowledge of relationship marketing literature. Ninth, this study aims to assist in the definition of good practice on SNS. Tenth, and finally, this work contributes to a better theoretical and practical understanding of the phenomenon of "word of mouth" in a digital environment.

4.3 Future Research Direction

Different research suggestions were presented throughout the chapters that compose this work (and many others could be added). The following is a summary of what was suggested:

- More information regarding the differences between “fertilized” WOM and “organic” WOM is necessary.

- Brand equity is a long familiar topic in the marketing literature; however, the use of SNS is not. Therefore, further research based on different methodologies focused on the relation between brand equity levels and brands’ participation on social network sites is welcome.

- Though the proposed categories and respective descriptions are capable of representing and describing the observed followers’ behavior, further research is also necessary to validate them, so that can they be generalized to other brand communities.

- It would be interesting to investigate whether engaged followers are more engaged with the brand or with the community, and when they publish on the brand’s Facebook page, if they expect the community to answer or the brand?
- New econometric insights can be useful to determine the relation between the variables new likes, WOM, engaged users, and brand’s activity.

- In order to complement the presented eye tracking study, it would be pertinent to include in the analysis other visual attention variables (like duration of attention and of saccades’, inter and intra elements, activity of the advertised brands), as well as to include a larger (n>100) and non-student sample.

- It would be also interesting to analyze the effectiveness of social ads on users’ attention using eye-tracking technology, and compare the results with posted recommendations. Another suggestion would be to use a survey to assess and compare the notoriety levels between banner ads and friends’ recommendations.

Personally, this work has motivated me to deepen my knowledge in the fields of brand equity, digital marketing, the phenomenon of word of mouth, and even to learn social network analysis. I am also very interested in employing other innovative technological tools (such as the eye tracking devices) to image, text, and even sound to make social sciences and humanities research more efficient, effective, and comprehensive. Last but not least, I would like to deepen my profound interest in econometrics.
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6. Appendix
1. Brand notoriety of Coca-Cola, Study 1

Table xx Brand Notoriety Results – Top of Mind

<table>
<thead>
<tr>
<th></th>
<th>Coca-Cola Frequency</th>
<th>Pepsi Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>90</td>
<td>111</td>
</tr>
<tr>
<td>Yes</td>
<td>247</td>
<td>120</td>
</tr>
<tr>
<td>Total</td>
<td>337</td>
<td>231</td>
</tr>
</tbody>
</table>

Table xxx Brand Awareness Results

<table>
<thead>
<tr>
<th></th>
<th>Coca-Cola Frequency</th>
<th>Pepsi Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Yes</td>
<td>336</td>
<td>229</td>
</tr>
<tr>
<td>Total</td>
<td>337</td>
<td>231</td>
</tr>
</tbody>
</table>

2. Tests of Normality of Coca-Cola consumers, Study 1

<table>
<thead>
<tr>
<th>Groups</th>
<th>Kolmogorov-Smirnova</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Followers</td>
<td>.205</td>
<td>32</td>
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<tr>
<td>Non-followers</td>
<td>.066</td>
<td>164</td>
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<tr>
<td>Non-SNS users</td>
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<td>22</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction

3. Tests of Normality of Pepsi consumers, Study 1

<table>
<thead>
<tr>
<th>Groups</th>
<th>Kolmogorov-Smirnova</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Followers</td>
<td>.135</td>
<td>16</td>
</tr>
<tr>
<td>Non-followers</td>
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<td>164</td>
</tr>
<tr>
<td>Non-SNS users</td>
<td>.139</td>
<td>23</td>
</tr>
</tbody>
</table>
*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

### 4. Tests of Normality of Coca-Cola consumers, Study 2

<table>
<thead>
<tr>
<th>Groups</th>
<th>Kolmogorov-Smirnov(^a)</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Brand Equity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Followers</td>
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<td>3</td>
</tr>
<tr>
<td>Non-followers</td>
<td>.356</td>
<td>3</td>
</tr>
<tr>
<td>Non-SNS users</td>
<td>.232</td>
<td>3</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction

### 5. Tests of Normality of Pepsi consumers, Study 2

<table>
<thead>
<tr>
<th>Groups</th>
<th>Kolmogorov-Smirnov(^a)</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Brand Equity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Followers</td>
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<td>4</td>
</tr>
<tr>
<td>Non-followers</td>
<td>.327</td>
<td>4</td>
</tr>
<tr>
<td>Non-SNS users</td>
<td>.239</td>
<td>4</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction
6. Likes response to shocks in advertising reach

![Graph showing likes response to shocks in advertising reach]

7. Likes response to shocks in previous number of engaged users:

![Graph showing likes response to shocks in previous number of engaged users]

8. Likes response to shocks in previous WOM:

![Graph showing likes response to shocks in previous WOM]
9. Likes response to shocks in brand activity reach:

10. Likes response to shocks in previous likes:

11. WOM response to shocks in likes:
12. WOM response to shocks in Number_engaged_users:

![Number of Engaged Users Graph]

13. WOM response to shocks in Viral_Reach:

![Viral Reach Graph]

14. WOM response to shocks in previous WOM:

![Previous WOM Graph]
15. WOM response to shocks in brand activity Reach:

![Graph showing WOM response to shocks in brand activity Reach](image)

16. WOM response to shocks in previous number of engaged users:

![Graph showing WOM response to shocks in previous number of engaged users](image)

17. WOM response to shocks in previous viral reach:

![Graph showing WOM response to shocks in previous viral reach](image)
Online survey applied to companies:

This questionnaire has been designed to gain anonymous information about the perception of brand equity, the use of the social network sites and viral campaigns from the brand perspective.

Your participation in this survey is voluntary. It will take around 5 minutes of your time to complete the survey and you may choose not to answer at any time.

If you want to receive the results of this survey, please send an email with your contact information to barreto.anamargarida@gmail.com.

The answers you and other provide will be used in my Ph.D dissertation.

If you have any questions please do not hesitate to contact me.
Thank you!
Ana Margarida Barreto
New University of Lisbon

About the topic of brand equity:
1. What do you consider to be the characteristics of a strong brand? (open question)

2. Please evaluate the following sentences
   1 – strongly disagree; 5 - strongly agree
   A positive brand relationship is an inevitable outcome of a strong brand
   Relational paradigm will ultimately substitute the neoclassical paradigm (or marketing mix).
   Brand awareness is not a direct antecedent of brand equity, therefore should not be considered when evaluating the equity of a brand.
   Relational paradigm will ultimately complement the neoclassical paradigm.
   Loyal customers are the best brand ambassadors.

3. What kind of factors do you consider when measuring the equity of your brand? (open question)

4. Please order the following concepts by importance (from high to low):
   Brand image / brand awareness / brand relationships / brand loyalty / quality

About the topic of viral campaigns and word of mouth phenomenon:
1. From your perspective, what seems to be the biggest challenge when using viral campaigns? (open question)

2. Have you ever had a specific campaigns focus on getting word of mouth?
   No
   Yes
   If yes, what were the reasons for doing it?

3. How did you evaluate the obtained results (please apply your answer to the more recent case)? (open question)
4. Do you find important to track word of mouth?  
No/Yes

**About the topic of social network sites:**

1. Do you use social network sites (SNS)?  
No/Yes  
If yes, how much percentage of the overall communication or marketing budget is applied to it?

2. Why did you decided to use SNS? (open question)

3. How do you measure the results of a campaign using SNS? (select all that apply)  
- number of likes  
- number of comments  
- number of sharing information  
- content analysis  
- sales  
- other. Please specify:

4. Could you please specify the disadvantages you found of using SNS? (open question)

5. Please evaluate the following statements:  
   1 – strongly disagree; 5 - strongly agree  
   - I found banner ads on Facebook efficient  
   - Using SNS has changed the way I communicate with my target  
   - SNS has brought useful insights about my target  
   - SNS has empowered brands  
   - My messages on SNS are not personalized to my target  
   - By using SNS I have been able to establish a closer relationship with my target  
   - I found social ads on Facebook efficient  
   - When I use SNS I apply a one-to-one communication with my target  
   - SNS has empowered consumers

6. Are you planning to use SNS in the future? (please choose the statement that best describes your opinion)  
I am positively sure that I will. SNS are here to stay.  
Perhaps.  
I don’t think so. SNS are just a temporary trend.

7. What seem to be the biggest challenge when using SNS? (open question)

**Thank you for your participation!**
Online survey

This questionnaire has been designed to gain anonymous information about the use of the social network site Facebook and the current perception of selected brands. Findings are only reported at an aggregate level, not on an individual basis.

Your participation in this survey is voluntary. It will take around 5 minutes of your time to complete the survey and you may choose not to answer at any time.

If you want to receive the results of this survey, please send an email with your contact information to barreto.anamargarida@gmail.com.

The answers you and other provide will be used in my Ph.D dissertation.

If you have any questions please do not hesitate to contact me. Thank you!
Ana Margarida Barreto
New University of Lisbon

1. Did you know the brand before becoming a follower/put a like on their page?
   Yes
   No

2. Are you a brand’s consumer?
   Yes
   No

3. Were you already a brand’s consumer when you become friend/follower on Facebook?
   Yes
   No

4. How did you find out about the brand's profile on Facebook?
   Search
   Advertising
   Friends’ recommendation
   Heard about it (online or offline word of mouth)

5. Why did you become fan? (Please check all that apply)
   My friends recommended
   To get further information about their products/services and events
   To participate in a promotion/contest
   To get benefits
   For professional purposes
   Other (please specify)

6. How often do you visit the brand's page?
   Every day
   More than one time per week
   One time per week
   More than one time per month
   One time per month
I don't visit

7. When you visit your brand's page on Facebook, do you participate in it? (Please check all that apply)
   Add comments
   Add "likes"
   Check news
   Share their posts on my Facebook page
   Ask for information
   Read the comments
   Just looking for entertainment
   Express my satisfaction
   Complain
   I don't visit the brand’s page

8. Do you used to engage with the brand before being a follower on Facebook?
   Yes
   No

9. Since you start following the brand on Facebook
   (Disagree) 1 2 3 4 5 (agree)
   Are you more satisfied with their products/services?
   Do you consume more their products
   Does the brand's image have changed for better
   Do you know more about their products/services
   Are you more loyal to the brand
   Do you feel that the brand really cares about building a relationship with me
   Do you feel that the brand is more open
   Do you feel that the brand is more trustable
   Do you feel that the brand is more competent
   Do you feel that the brand is more listener

10. Did you ever recommended the Facebook brand's page to your friends? (Please check all that apply)
    Yes, in my offline interactions
    Yes, in my online interactions
    No

11. Did you ever recommended the brand
    Yes, before following the brand on Facebook
    Yes, after following the brand on Facebook
    Yes, before and after following the brand on Facebook
    No

12. Did you ever shared brand's content on Facebook, and why? (Please check all that apply)
    Yes, I found the content funny and wanted to share with others
    Yes, I found the content interested and wanted to share with others
    Yes, to participate in a contest or to benefiticate in a promotion
    Yes, to advice
    Yes. For other reasons. (Please fill in the blank)
    I never shared content

13. To whom did you share brands content?
Friends
Family
Colleagues
Blogs/Forums
I never shared content

14. Please indicate how can be define the content of the information shared:
Positive
Negative

15. Please indicate how you shared the information (Please check all that apply)
By offline interactions (word of mouth)
By Facebook or other social network site (twitter, pinterest, linked in, etc)
By email
By blogposts/forums

16. Would you share the following content about the brand?
Contest/Promotion
Product/Service information
Entertaining

<table>
<thead>
<tr>
<th>Spontaneously</th>
<th>If required</th>
<th>No</th>
</tr>
</thead>
</table>

17. To whom would you share?
Contest/Promotion
Product/Service information
Entertaining

| Friends | Family | Colleagues | Blogs/Forums |

18. Please indicate your gender
Female
Male

19. Please indicate your age

Thank you!
Survey

a) What brands of flavored non-alcoholic drinks can you think of?

No/Yes

b) Do you know this brand?

1 – strongly disagree; 5 - strongly agree

c) I consider this brand as a relevant option whenever I’m thirsty
d) I like the look, design of the brand
e) Compared with other brands in the same category, I like the price
f) The brand is social responsible
g) The brand brings me good memories
h) People I admire and respect use this brand
i) I like the taste/quality of the brand
j) The brand is better than other products of the same category
k) The brand takes my interests in mind
l) The brand is unique
m) I am satisfied with the brand
n) I trust this brand
o) I like the brand
p) The brand gives me the feeling of social approval
q) The brand gives me the feeling of security – no risks associated with consumption
r) I frequently consume this drink
s) If I don’t find this brand, I consume other similar soft drink
t) If I don’t find this brand, I consume very different soft drink
u) If I don’t find this brand, I’ll go to another place to buy it
v) I add "likes" on the brand's Facebook page
x) I’m proud to have others know I use this brand
w) I’m always interested in learning more about this brand
z) The brand is more than a product to me
aa) I indentify with the brand
bb) I feel strongly connected with others who use this brand
cc) I add comments on the brand’s Facebook page
dd) I would recommend the brand to others
ee) I talk about this brand to others in my person-to-person contacts
ff) I talk about this brand to others in my online interactions
gg) I share the brand’s posts on my Facebook page
**Content validity – survey:**

*Before finishing, I would like to ask what do you think about this survey. Your opinion is highly appreciated!*

**How do you evaluate the…**

<table>
<thead>
<tr>
<th>Category</th>
<th>Poor</th>
<th>Average</th>
<th>Good</th>
<th>Very Good</th>
</tr>
</thead>
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<tr>
<td>Question content</td>
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<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Wording</td>
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<td>0</td>
<td>0</td>
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<td>Sequence</td>
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<tr>
<td>Layout</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Questions were…*

0 Clear and simple
0 Difficulty to understand (could you please specify which one______________)

*Concerning the instructions, they were:*

0 Sufficient to solve the task
0 Insufficient

*Feel free to leave any comment or suggestion:*
This questionnaire has been designed to obtain anonymous information about your use of
the social network site Facebook.
Your participation in this survey is voluntary. You may decline to answer any question and
you have the right to withdraw at any time without penalty.
This study has been cleared to proceed by the Institutional Review Board (IRB).
Thank you for your time!

1. How long have you been using Facebook?
   - Never used it
   - Less than 6 months
   - 6 to 12 months
   - 1 to 3 years
   - Over 3 years

2. How often do you visit Facebook page?
   - Never
   - One time per month
   - More than one time per month
   - One time per week
   - More than once a week but not daily
   - Every day

3. How much time do you spend on Facebook each time you log in?
   - I do not use Facebook
   - Less than 15 minutes
   - Between 15 minutes and half an hour
   - Less than 1 hour
   - 1 to 2 hours
   - More than 2 hours

4. Are you fan of a brand on Facebook?
   - Yes
   - No (if you answer no, please skip to the question 7)

5. For how many brands (from companies or institutions) are you fan?
   - 1
   - 2 to 4
   - 5 to 10
   - 11 to 15
   - More than 15
6. Why did you become a fan? (Please check all that apply)
   ☐ My friends recommended it
   ☐ I like the brand
   ☐ I identify myself with the brand
   ☐ To get further information about their products/services and events
   ☐ To participate in a contest
   ☐ To get benefits
   ☐ Other: ____________________________

7. When you visit a brand's page, do you participate in it? (Please check all that apply)
   ☐ Yes, I add comments
   ☐ Yes, I add "likes"
   ☐ No, I just share their comments on my Facebook page
   ☐ No, I just read the comments
   ☐ I don't visit the brand's page

8. How do you get knowledge of the content of brand page? (Please check all that apply)
   ☐ I visit the brand’s page
   ☐ I see the content on my initial page
   ☐ Through my friends’ activity
   ☐ Other: ____________________________

9. What do you think of Facebook ads?
   ☐ I like them
   ☐ I dislike them
   ☐ I don’t mind them

10. When do you click on ads? (Please check all that apply)
    ☐ I don’t click on ads
    ☐ When my friends liked it
    ☐ When I look for a specific product or service
    ☐ When I visit the brand’s page
    ☐ When ads call my attention, although I’m not looking for any product or service

Demographic Survey:

1. Are you Male or Female?
   ☐ Male
   ☐ Female

2. What is your age? _________

Thank you for your participation!