

# **Consumer Empowerment in the Internet Generation**

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## **Industrial Engineering and Management**

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## **Abstract**

This dissertation focuses on the concept of empowerment and how the Internet is being used as an empowering tool by the so called Internet Generation. The empowerment is studied from the point of view of the consumer and it covers aspects like personal empowerment and the consequences of this empowerment. The consumer decision-making process, the role of search engines and the marketing strategies that the brands follow on the Internet are also explained. Consumer empowerment in the Internet Generation covers consumer numerical skills, awareness of legislation and consumer engagement. The researcher administered a questionnaire to survey all these aspects related to consumer empowerment. The purpose of this questionnaire is to gather enough data in order to contrast the Spanish and Portuguese samples and to understand what are their differences in terms of consumer empowerment. The thesis also compares the Internet Generation with other generations as not all the respondents belong to same generation. As a second purpose consumer empowerment will be studied as a function of several facets of the Internet that turn the consumer more powerful, and of some social values closely related to empowerment. The results found shows that effectively the Internet Generation is more consumer empowered than other generations while the difference between Spanish and Portuguese are small and related to the consumer normative knowledge.

## **Keywords**

Internet, empowerment, E-empowerment, Consumer empowerment, Internet Generation.

# Table of content

<b>Acknowledgements</b> .....	<b>i</b>
<b>Abstract</b> .....	<b>ii</b>
<b>Keywords</b> .....	<b>ii</b>
<b>List of figures</b> .....	¡Error! Marcador no definido.
<b>Introduction</b> .....	<b>1</b>
<b>1 Literature review</b> .....	<b>3</b>
1.1 <i>Empowerment</i> .....	3
1.1.1 Empowered by the Internet .....	6
1.2 <i>Consumer empowerment</i> .....	8
1.2.1 The consumer sovereignty model .....	9
1.2.2 The cultural power model .....	10
1.2.3 The discursive model.....	10
1.2.4 Operational definition, how was measured consumer empowerment before .....	11
1.3 <i>Consumer empowerment in the Internet Generation</i> .....	12
1.4 <i>Search engines, decision making and satisfaction</i> .....	15
1.5 <i>Trust and privacy on the Internet</i> .....	18
1.6 <i>Impact on brands</i> .....	22
<b>2 Methodology</b> .....	<b>24</b>
2.1 <i>Data collection</i> .....	24
2.2 <i>Population</i> .....	25
2.3 <i>Construction of the questionnaire</i> .....	25
2.3.1 Type of questions .....	26
2.3.2 E -empowerment .....	28
2.3.3 Consumer empowerment .....	30
2.3.4 Power values .....	32
2.3.5 Demographic Information .....	33
2.4 <i>Questionnaire pre-test</i> .....	33
2.5 <i>Statistical techniques</i> .....	34
2.5.1 Interpreting the regression coefficients .....	36
<b>3 Results and discussion</b> .....	<b>38</b>
3.1 <i>Sample descriptive analysis</i> .....	38
3.2 <i>Factor analysis</i> .....	40
3.2.1 Factor analysis e-empowerment .....	40
3.2.2 Factor analysis consumer empowerment.....	43
3.2.3 Factor analysis power values .....	45
3.2.4 Validity and reliability of the constructs .....	46
3.2.5 Factor analysis regarding nationality sub-samples .....	48
3.3 <i>Multiple regression</i> .....	48

3.3.1	Multiple regression c_engagement_proactive_behavior .....	48
3.3.2	Multiple regression c_engagement_knowledge .....	50
3.3.3	Multiple regression c_awareness_of_legislation .....	51
3.4	<i>Multiple regression for Portuguese sub-sample</i> .....	51
3.5	<i>Multiple regression for Spanish sub-sample</i> .....	53
3.6	<i>Summarization of the regression analyses</i> .....	55
3.7	<i>Logistic regression</i> .....	58
3.7.1	Logistic regression for nationality .....	58
3.7.2	Logistic regression for age .....	62
<b>4</b>	<b>Conclusions</b> .....	<b>65</b>
<b>5</b>	<b>Limitations and future research</b> .....	<b>69</b>
<b>6</b>	<b>Appendices</b> .....	<b>70</b>
	<i>Appendix 1 Main concepts</i> .....	70
	<i>Appendix 2 Internet</i> .....	72
	<i>Appendix 3 Questionnaire</i> .....	73
	<i>Appendix 4. Factor analysis for Consumer Eempowerment using tetrachoric correlations....</i>	86
	<i>Appendix 5 One variable to define consumer empowerment</i> .....	89
	<i>Appendix 6 Factor analysis tables</i> .....	106
	<i>Appendix 7 Logistic regression tables</i> .....	108
<b>7.</b>	<b>References</b> .....	<b>110</b>

## List of tables

Table 1. Levels of empowerment (Silva and Loreto, 2004) .....	5
Table 2. Reliability Statistics e-empowerment .....	40
Table 3. KMO and Bartlett's Test of Sphericity e-empowerment .....	41
Table 4. Rotated Component Matrix e-empowerment <sup>a</sup> .....	41
Table 5. Rotated Component Matrix e-empowerment <sup>a</sup> .....	42
Table 6. Rotated Component Matrix consumer empowerment <sup>a</sup> .....	44
Table 7. Correlation between power values variables .....	45
Table 8. KMO and Bartlett's Test power values .....	45
Table 9. Component Matrix power values <sup>a</sup> .....	45
Table 10. Rotated Component Matrix power values <sup>a</sup> .....	46
Table 11. Discriminant validity.....	48
Table 12. Adjusted R square c_engagement_proactive_behavior .....	49
Table 13. Standarized coefficients c_engagement_proactive_behavior .....	50
Table 14. Tolerance and VIF c_engagement_proactive_behavior .....	50
Table 15. Standarized coefficients c_engagement_knowledge .....	51
Table 16. Standardized coefficients c_awareness_of_legislation.....	51
Table 17. Standardized coefficients c_engagement_proactive_behavior Portuguese subsample .....	52
Table 18. Standardized coefficients c_engagement_knowledge Portuguese sub-sample.....	53
Table 19. Standardized coefficients c_awareness_of_legislation Portuguese sub-sample .....	53
Table 20. Standardized coefficients c_engagement_proactive_behavior Spanish sub-sample.	54
Table 21. Standardized coefficients c_engagement_knowledge Spanish sub-sample .....	55
Table 22. Standardized coefficients c_awareness_of_legislation Spanish sub-sample .....	55
Table 23. Summarization multiple regression 1 .....	56
Table 24. Summarization multiple regression 2 .....	56
Table 25. Summarization multiple regression 3 .....	57
Table 26. Summarization multiple regression 4 .....	57
Table 27. Case Processing Summary logistic regression nationality .....	58
Table 28. Block 0, Classification Table, logistic regression nationality .....	59
Table 29. Variables not in the Equation logistic regression nationality .....	59
Table 30. Model Summary logistic regression nationality .....	60
Table 31. Hosmer and Lemeshow Test logistic regression nationality .....	60
Table 32. Classification Table logistic regression nationality .....	60
Table 33. Variables in the equation logistic regression nationality .....	62
Table 34. Model Summary logistic regression for age .....	62
Table 35. Hosmer and Lemeshow Test logistic regression for age .....	63
Table 36. Classification table logistic regression for age <sup>a</sup> .....	63
Table 37. Coefficients logistic regression for age .....	64

## List of figures

Figure 1. Benefits of the Internet (Mateo,2009) .....	13
Figure 2. Search engine global market share (Hauptman, 2012) .....	15
Figure 3. Role of search engines .....	16
Figure 4. Influential factors in purchase decisions (Pew Research Center's Internet, 2014) ....	18
Figure 5. Trust on different media, percentage .....	19
Figure 6. Do customers trust on customer reviews as much as personal recommendations? Percentage vs Age .....	20
Figure 7. Internet users' growing privacy concerns .....	21
Figure 8. Personal information on line .....	22
Figure 9. Framework of Consumer empowerment.....	30
Figure 10. Logistic regression curve .....	37
Figure 11. Gender .....	38
Figure 12. Generation .....	38
Figure 13. Nationality for people of 25 years old or over .....	39
Figure 14. Nationality for people under 25 years old .....	39
Figure 15. Occupation versus nationality .....	39
Figure 16. Education completed (in years) .....	40
Figure 17. Scatterplot for residuals c_engagement_proactive_behavior .....	49
Figure 18. Color classification coefficients .....	56

# Introduction

As the title of the thesis suggests, the researcher has tried to contextualize the gradual increase in power that has been given and that is perceived by the consumer since the advent of the Internet in 1991 (the year in which it was announced the World Wide Web). The study focuses mainly on the consumer but inevitably also explains the role that companies have had in this process. It also covers aspects related with the consumer psychology trying to define properly which factors empower consumers.

The empowerment concept has been studied for years from the point of view of the worker. Mary Parker Follett explained the importance of people rather than engineering techniques and the importance of a common goal inside the organization. Chester Barnard understands an organization as a group of workers able to take their own decisions. The theory of authority states that workers are free to choose whether to follow or not manager requests, taking into account that people usually follow requests because it is beneficial for themselves (Daft, 2013). In psychology the term empowerment is studied, among others, by Zimmerman (2000) who defended the existence of three levels of empowerment: individual, organizational and community.

More recently, empowerment has been studied from the point of view of the customer, where Denegri et al. (2006) divided it in 3 levels: the consumer sovereignty model, the cultural power model and the discursive power model. The concept of consumer empowerment is used in marketing literature to explain an increase in abilities of the consumer (Wathieu et al., 2002) or the empowerment related to greater information or understanding (Brennan et al., 2004). Also, Conger and Kanungo (1988), link the individual consumer empowerment with aspects of information provided by the Internet as enabler of empowerment. In general terms wider choice, easier information access, and higher education are supposed to be the premises to consumer empowerment.

The Internet generation, meaning those born between 1990 and 2009, has grown side by side with the Internet advent. Thanks to the Internet, consumers may now feel more empowered due to their acquired abilities to search for new market information taking advantage of the different alternative propositions and sharing information between consumers. Internet Generation is supposed to have the ability to find greater information and wider choice of the market, having as a result better understanding and higher education on the market offers (Michela et al., 2011). Thanks also to the Internet, firms are more frequently giving consumers the opportunity to specify product characteristics, to select the delivery channel, to control their exposure to advertising, to share their experiences and choices with other consumers, and even to propose their own prices.



In this context the research questions to be answered are:

- Is consumer empowerment real? Which are the facets or dimensions where it occurs?
- Does the Internet help, in some way, to that consumer empowerment? How does it help?
- Is the Internet Generation the one that achieves more consumer empowerment?
- Which are the social values, derives from the term empowerment, that impact in consumer empowerment?
- Between Portuguese and Spanish, is there any different in terms of consumer empowerment?
- Do consumers know the legislation and their rights?
- Does consumer empowerment depend on gender, education or nationality?

To shed some light in these issues, a number of objectives are proposed in this research:

- To define which features of the concept empowerment are applicable to the consumer
- To understand what is consumer empowerment and find if it is real or not
- To study what forms consumer empowerment
- To find the relationship, if it exists, between consumer empowerment and gender, education and generation
- To contrast consumer empowerment between Portuguese and Spanish
- To define which are the facets of the Internet that promote consumer empowerment
- To confront the Internet Generation against other generations in terms of the consumer empowerment
- To define which are the social values related to empowerment (power values) that influences in the consumer

The structure of the literature review starts with an explanation of the concept empowerment and the empowerment from the point of view of the consumer. Finally it is studied the consumer empowerment explained for the Internet Generation (those people born in the nineties). It is also covered the impact of the Internet search engines on the perceived empowerment, the different marketing strategies pursued by companies, as well as the consumer buying decision process. Trust on the Internet is also studied. Finally it is mentioned the consequences of empowerment for individuals and for brands. The chapter of Methodology explains the instrument used to collect the data on the desired variables and the statistical techniques that allowed to answer the research objectives. It follows in chapter 3 the data analysis and the discussion of the results. Finally, conclusions were drawn regarding the research questions. Limitations and suggestions for future research are presented in chapter 5. To present data and concepts that didn't need to be included in the main body of the thesis, the appendices contain information on the main concepts definition, some tables of results and the questionnaire in the three languages that it was administered.

# 1 Literature review

This section draws on relevant scientific literature trying to frame the main concepts, definitions, methodologies and results of prior research related to the topic Consumer empowerment. The literature review goes from general concepts such as empowerment to more focused issues as the possible impact of the Internet on empowerment and the significant contributions of different authors to explain and measure Consumer Empowerment.

## 1.1 Empowerment

Empowerment is a concept that links individual strengths and competencies, natural helping systems, and proactive behaviors to social policy and social change (Rappaport, 1981, 1984). For Rappaport (1981), empowerment means that we do not see people as kids with special needs or ordinary citizens with rights that must be defended by an external agent, but as whole human beings with needs and rights, which are able to take control over their own lives. An ideology of empowerment involves the belief that individuals and local groups are able to resolve multifaceted problems, because a variety of solutions can come from a variety of different people. In this scenario, individuals learn from the experiences of communities, contributing to the creation of environments (forums, chats, web sites) where individuals can compare and find their own solutions and gain experience empowering themselves.

For Zimmerman (2000), the empowerment implies a kind of community intervention and social change that is based on the strengths, skills and social support. The concept comes from its emphasis on the positive aspects of human behavior, such as the promotion of wellness rather than the cure of problems or the identification of risk factors. Therefore, in this perspective, the individual has a role of collaborator, facilitator and provider of resources, thus, the community becomes an active participant in the process of the individual development.

Empowerment can be understood as a process (empowering) and also as a result or outcome (empowered) (Zimmerman, 1995, 2000). Empowerment processes occur when people create or are given opportunities to control over their own destinies and influence decisions that affect their lives, while the results of empowerment relate to the effects or consequences of these processes. Empowerment is also conceived as a cognitive, affective and behavioral process by Mechanic (1991), who defines it as a process by which individuals learn to see the correspondence between their goals and the feeling of knowing how to achieve them, as well as a relationship between their efforts and results they get. Rappaport (1984) states that empowerment implies a process where people, organizations and communities gain control over their lives. Both Zimmerman and Rappaport (1988) agree that empowerment is a construct that links individual strengths and capabilities (skills) with matters of social change and social policy.

Zimmerman and Warschausky (1998) have tried to differentiate between the various components involved and the possible levels of the term empowerment. According to these authors, empowerment can be understood or analyzed in relation to different planes or levels: individual, organizational and community. These three levels are interrelated, which means that any variation intervention in one of them may affect the others.

At the individual level, empowerment refers to the perception of personal control, the understanding and acceptance of group norms, the ability to collaborate with others by giving mutual support, and the design of strategies and specific decisions regarding any given situation. People may experience empowerment in relation to some area of life, but not necessarily all of the areas (Paulhus, 1983). Individual empowerment not only focuses on the individual, also requires community engagement and understanding of the socio-political environment in which the individual is involved. Individual empowerment is composed of three components or dimensions:

1. The Interpersonal aspects that refer to components of interaction and behavior. The interpersonal component is focused on what people think of themselves and includes the perceived control in specific areas, self-efficacy, motivation for control and perceived competence. Interpersonal variables that would be the opposite of psychological empowerment are social isolation, powerlessness, lack of standards and despair.

2. The interaction component refers to the knowledge that people have of the context, referring to matters relating to the socio-political environment. This means that people should be aware of the specific behavioral options that should be carried in that medium and also the values and norms that rule the environment, The interaction component is also related to group decision-making, to the ability to compromise with collective interests (vs. individual interests) and the mutual assistance.

3. Finally, the behavioral component refers to the specific actions in order to influence the environment, and includes stress management and adaptation to changes in the environment.

The combination of these three components implies that a person has:

- a) The belief that it has the ability to influence in a context determined (intrapersonal component),
- b) Understanding of how the system works (component interaction),
- c) Implementation of control behaviors on the environment (behavioral component).

However, individual empowerment cannot be studied alone, because the individual does not live alone, he/she lives in a structured community, so it is necessary to take into account the organizational and community variables: the empowerment is not just a feature of the subject, but it is also linked to the community where the individual lives. At the organizational level, empowerment includes processes and structures that increase the participation of its members

and enhance the achievement of results for the organization (Perkins and Zimmerman, 1985). Empowerment processes at the organizational level relate to the acquisition of power in the organizational structure and decision-making processes. It is focused on group work, the opportunity to share responsibilities, recognition of the contribution to organizational results sharing the successes of the organization. It is important to differentiate between organizations that empower their members (empowering organizations), and empowered organizations (Zimmerman, 2000). In the first case, these organizations provide its members with opportunities to gain control, while in the second case empowered organizations develop successfully policy decisions offering a service to the community and its members. The organizations that empower their members may have little impact on policy, but they offer their members opportunities to develop skills and sense of control inside the organization.

At the community level, empowerment is the ability of the community to respond effectively to the challenges presented. It refers to the efforts of individuals to improve the lives of other individuals in the community by enhancing the links between community organizations and the institutions that help to maintain quality of life.

Table 1 summarizes the empowerment concept in the different individual, organizational and community levels, distinguishing the idea of empowerment as a process and as a result:

Table 1. Levels of empowerment (Silva and Loreto, 2004)

<b>Empowerment</b>		
as a		
	<b>process</b> "empowering"	<b>outcome</b> "empowered"
<b>individual</b>	learning decision-making skills resource management work with others	sense of control participation behaviour
<b>organizational</b>	participate in decision making shared responsibilities shared leadership	competition for resources coalitions with other organizations politic influence
<b>community</b>	access to resources	skills of participation of citizens

This classification has been highly adopted although there are some other definitions and classifications of empowerment. Gutierrez (1990) defined it as "a process of increasing personal, interpersonal, or political power so that individuals can take action to improve their life situations" (p. 149). Gutierrez (1990) pointed that empowerment may be considered at the macro level, attending to political and objective change and the micro level, that focuses on individual or personal change.

For Gutierrez (1990) a measure of empowerment at the micro level of analysis should reflect an understanding of community functioning (cognitive), feelings about one's ability to make changes in the community (emotional), and participatory activities focused on social change in community contexts (behavioral).

### **1.1.1 Empowered by the Internet**

Empowerment has become a framework for social work research, measurement and practice. It can be related to several fields such as ethnic minority groups (Gutierrez, 1990), social policy (Zippay, 1995), mental health (Sally et al., 1997), community organizing (Smith, 1776), sexual orientation (Morrow, 1996), and social workers (Hayes, 1994). Although empowerment has been largely studied and because of the relative youth of the Internet, empowerment and the range of possibilities offered by the Internet are still studied.

Amichai et al. (2008) explain why nowadays users of the Internet are empowered by the Internet. In their article they propose a new concept called E-empowerment which means Empowerment by the Internet and that comprises 4 levels: the personal, the interpersonal, the group and the citizenship level.

The personal and interpersonal levels describe how the Internet allows the individual to reframe or makes changes to his or her identity, increase self-efficacy, self-esteem, social skills and the strength of the existing relationships and the formation of new ones. For these authors, the Internet has the power to shape or change the view others have of ourselves. When people try to change aspects of their personality these changes do not occur until they are socially validated (Gollwitzer, 1986; Harter, 1993). Changing the self-concept when the social environment is static is complicated, so most personality changes take place in the great changes such as moving to a new city, changing jobs or college, among others (Harter, 1993; Ruble, 1994). Internet is a dynamic changing environment where people can experience an easier change in personality because they can create a new identity or profile, remodel themselves, know what they want from themselves and shape their personality. This empowerment comes from blogs, forums, chat rooms that works as "identity workshops" where people learn how to use their social skills (Bruckman, 1992).

The Internet also provides new attitudes and abilities to interact with others. Those who are afraid of failing in front of their relatives lose this fear when it comes to writing or express an opinion on the Internet. Thanks to this, the Internet user can learn social skills that they would not learn otherwise. Users are able to experience greater control over their interaction. They can choose what, when, how far to expose personal information and edit responses before replying. The anonymity offered by the Internet turns this medium into a highly protected environment that favors the expression without fear of being afraid of what others may think (Bandura, 1990). Moreover, the ability to communicate anonymously online may reduce the

sense of threat because if the individual fails, the cost of that failure is significantly reduced if we compare it to a failure that occurs among individual's friends and family.

Indeed, for Bandura (1990), the evidence suggests that, on the Internet, the poor (in terms of social contacts) gets richer. This effect happens in the case of introverts, neurotics, the lonely, people with physical disabilities and also people who experience high levels of social anxiety do better in small groups online because the fear factors disappear in non face-to-face situations. These mastery situations, where the individual practices the social skills may lead to a better self-efficacy over time. The ability of people with poor social skills to use the net successfully constitutes a significant demonstration of E-empowerment (Amichai et al., 2008).

Another way of empowerment comes from the lack physical appearance on Internet. When interactions take place online, physical appearance does not exist so first impressions are formed on different criteria. Rather than supporting impressions on superficial features such as attractiveness, nationality or skin color, the opinions expressed and the information about the self, become the basis of first impressions the others obtain of us (McKenna et al., 2002). This is clearly important for people that belong to negatively stereotyped groups because when physical characteristics are unavailable, people are only judged according to their contribution to the interaction, community, or project (Amichai et al., 2008).

Amichai et al. (2008) divide the group level into four sub levels: finding similar others, group reinforcement, variety of group decision-making tools and group crystallization. Tajfel and Turner (1986) stated that being member of a group that shares common goals enhances self-esteem whereas Amichai and co-authors explain the group level as the facility to develop group identification. They also think self-esteem and self-acceptance are enhanced because when an individual belongs to a group he or she has the capacity to send and receive ideas from all the group members in effective ways via the Internet.

Finally, the last level of E-empowerment, Citizenship, explains the interaction between government and citizens in the Internet environment. Political participation, accessibility and the ability to influence government decisions are enhanced on the web. Internet allows citizens to express opinions or complaints (Williamson, 2004). Some of these complaints may come from successful forums or blogs that attract millions, mobilize public opinion, organize protest against perceived injustices and force those who govern to change or create laws. On the other hand these forums or blogs can be seen as places where government can empower citizens by making them feel that they are contributing to the well running of their community. Some studies have shown that civic involvement increases with the Internet (Borgida and Stark, 2004), one example is E-voting. Amichai et al. (2008) set the example of the political vote in Arizona in 2000, where there was a 676% increase in voter turnout thanks to the vote by the Internet.

Summarizing, there are a lot of tools and opportunities on the web that lead to a greater empowerment, but unless the individual wants to take advantage of them the empowerment will not occur (Amichai et al., 2008).

## **1.2 Consumer empowerment**

The notion of consumer empowerment has been used in the marketing literature to explain subjective experience and states related to an increase in abilities (Wathieu., 2002) or the empowerment related to greater information or understanding (Brennan et al., 2004). Also, Conger and Kanungo (1988), link the individual consumer empowerment with aspects of information as enabler of empowerment. For the consumer, wider choice, easier information access, and higher education are the premises to empowerment and have, as consequence, greater involvement.

“The Customer is the king” or “the customer is always right” are phrases that we often hear in these recent times. The question is how we can discern if there is a real consumer empowerment, or if it is simply a marketing strategy that companies deploy to make the consumer believe that he or she is the one sustaining the power. Market is usually described as a battlefield between suppliers and also between suppliers and consumers. There is actually a unique struggle: consumer engagement. Firms compete by attracting consumers offering better prices and conditions, or better quality. This leaves the consumer in the best possible situation, the last link that makes the final decision (Pires, Stanton and Rita, 2006). The ability of consumers to have control of their own choices has been reported to be central to the experience of empowerment (Wathieu, 2002). Companies, therefore, not only try to sell a commodity or service, but also try to satisfy the consumer. They want to sell an experience that makes the consumer feel comfortable and satisfied in order to make consumers repeat. For all of these reasons “The consumer is the king” is a real statement, seeing the consumer as an abstract entity holding power surrounded by companies eager to serve if they want to survive.

In recent times, marketing strategies have become consumer centric appearing the term consumer empowerment strategies. Customization centered on the consumer, a new way of consumer empowerment, gives the consumer an opportunity to create his own product (Wind and Rangaswamy, 2001). Apparently, companies are giving power to the consumer through consumer centric strategies that increase competition among suppliers, but nevertheless these grants of power are controlled by the company using CRM (Customer Relationship Management) tactics.

CRM is the process whereby consumers are empowered by defining what they are interested or not interested in, what information and level of service they want, and how often they want to communicate with supplier. Instead of treating consumers as segments, it seeks to personalize interaction with individual consumers developing relationships between the supplier and consumers (Yancey, 2000).

Wright (2006) suggests that empowerment produces changes in consumers who become less passive in accepting what is offered by suppliers. She defines consumer empowerment as “a mental state usually accompanied by a physical act which enables a consumer or a group of consumers to put into effect their own choices through demonstrating their needs, wants and demands in their decision-making with other individuals or organizational bodies in the marketplace” (p.1).

The concept of consumer power has also been used to explain the nature and origin of demand and to justify the role of the consumer in marketing (Smith, 1987). Thanks to the new technologies, there has been a notable growth of critic research in the analyses of consumer power. Some authors of the Frankfurt School (Horkheimer and Adorno, 1993; Marcuse, 1991) expose the idea of powerless nature of consumers seduced by the pleasures of consumption. Also, Desmond (2003) emphasizes the volatility of power explaining how consumers appear as empowered champions of the market, while actually the consumer is victim of cultural domination. Despite these criticisms of the supposed power of the consumer, it is commonly accepted that the concept of consumer power is divided in three levels: the consumer sovereignty model, the cultural power model and the discursive power model (Denegri, Zwick and Schroeder, 2006).

### **1.2.1 The consumer sovereignty model**

Consumer sovereignty and empowerment has being studied in classical and neoclassical economic theories (Slater, 1997). Adam Smith (1776) exposed the role of the consumer as the core of modern market societies. His “invisible hand theory” explains the relation between sovereignty model and empowerment to the level of consumers' ability, skills, knowledge, motivations (Nelson, 2002). Adam Smith (1776) also relates empowerment as actions in defense of consumers' rights: class actions, boycott or movements against specific producers. According to this model, multiple market choices of sovereign consumers are the instrument that manages and operates the market, resulting in efficient production, better and cheaper products and social progress.

The concept of consumer sovereignty assumes that a set of well-informed consumers possess greater power than individual producers. Following the theoretical idea of a zero-sum, this notion of power is distributed among all relevant players, consumers and suppliers, so power becomes a divisible concept that is possessed by one of the players in detriment of another (Hindess, 1996).

Since, power is measured in behavioral outcomes, determining whether consumers or companies (i.e. producers, marketers) are empowered is a function of assessing who influences whom more. The examination of who influence whom prevails during key decision-making moments. When the individual consumer is able to promote his/her self-interests over those of a particular company it has some implications that regards to the amount of power exercised by



the consumer. Otherwise the company interest will succeed if the consumer cannot exercise his power of choice, because there are no multiple options in the market and then the company is supporting the power.

### **1.2.2 The cultural power model**

The cultural perspective explains consumers as a whole rather than as a series of individual people. The cultural power model argues that consumers are in the middle of political and cultural forces beyond their control, and can mainly resist or struggle within the market. In this perspective, it is studied the ways in which marketers try to establish cultural power to take the control through the production of commercial messages and design public spaces such as malls and other consumption environments to force or coerce consumers into consumption activities, as well as consumers' tactics to adapt to and resist the logic and interest of the marketer-designed space and practices (Kozinets and Handelman, 2004). So, consumer empowerment resides not in the simple capability to stand firm against these maneuvers, but it implies a strategic behavior, tactics to react to buyers' actions, motivations and processes whereby communities of various form resist and attempt to distinguish them from markets (Kozinets, 2002; Kozinets and Handelman, 2004).

Companies that attempt to manage and control consumer movement try to induce into a particular type of behavior by introducing special environments that induce the purchasing. For Golden and Zimmerman (1986), retail atmospherics and the supposed effects of store layout, product display, signage, lighting and music have some capacity to change consumer behavior. In this context, quantitative studies to measure consumer empowerment are less common, and cultural consumer power appears more linked to phenomenological research, often based on the direct evidence, the observation and interviews.

### **1.2.3 The discursive model**

The discursive power model attempts to explain consumer power by focusing on how consumers co-create markets. The discursive model sees that the interaction between consumers and marketers has an important outcome because those two are co-responsible of the market definition (Denegri-Knott, 2004). Here, empowerment is "the ability to construct discourse as a system, determine what is true or false" and "the ability to the consumer to mobilize discursive strategies to determine what can know and what actions can be undertaken" (Denegri, 2004, p. 956).

In the discursive model, researchers have tried to identify which are the internalized norms, codes, and rules, which represent the 'normal' consumer engagement. So, discursive model is based on understanding how power operates as a producer of discursive strategies that try to define what is a deviant consumer behavior within a particular consumption context and what is "normal". Studies attempt to illustrate how the context of consumption was discursively

constructed, what rules and norms were established to discipline consumers and specially to explore the ways in which managed communications produce desirable consumer behavior and how commercial environments operate or work to discipline consumer behavior.

### **1.2.4 Operational definition, how was measured consumer empowerment before**

Apart from the theoretical definition there are in the literature review several operational definitions that make easier the attempt to measure consumer empowerment. The Special Eurobarometer 342 (TNS Opinion and Social, 2011) has tried to understand better how consumers actually behave, defending the need of having “real choices, accurate information, market transparency and the confidence that comes from effective protection and solid rights” (p.5). This international study divided consumer empowerment into three main measurable aspects:

- Consumers’ skills that are basically basic numerical and financial skills and knowledge of logos and symbols.
- Consumer’s level of information comprising consumers’ knowledge of their rights, unfair contractual terms, unfair commercial practices, guarantee rights and the different governmental and non-governmental institutions.
- Consumers’ assertiveness in terms of consumer complaints and reporting behavior.

In order to measure these three facets they created a questionnaire with 57 questions translated into several languages and distributed across the countries of the European Union. Some of the questions required written responses while others were multiple choice questions, dichotomous questions, filter questions and scales. The nature of the analysis they made was only descriptive because they only compare the scores obtained by the different countries to conclude in a ranking explaining what were the countries with the highest score and therefore should be used as standards in terms of consumer empowerment.

Nardo et al. (2011), looking also for a measurable definition, reached the conclusion that consumer empowerment is based on knowledge, skills and assertiveness and it can come from different sources such as consumer education or institutional regulation. Taking into account the Special Eurobarometer 342, they also defined the same measurable dimensions of empowerment: Consumer skills, Awareness of legislation and Consumer engagement. They chose 27 questions from the special Eurobarometer 342 to work with them. The questions chose were dichotomous, multiple choice, filter and Likert scales. They stepped forward grouping the questions in the 3 dimensions they defined by assigning to each question a weight and score. The result is a variable called consumer empowerment index used to compare different countries.

Both studies aimed to clarify if variables such as gender, age, occupation, education, income, spoken language and Internet usage are significant for the three different dimensions.

The researcher found other references measuring empowerment although not from the consumer point of view. Hayes (1994) studied how to measure employees empowerment. He created a questionnaire consisting on estates whose response was a Likert scale of 5 points that the ends were “Strongly disagree” and “Strongly agree”. The questionnaire was composed of 14 questions and it was validated by comparing the results of two samples, one of them with 111 respondents and the other with 647. Since both samples obtained similar results the validity of the questionnaire was assured. With the data obtained in the questionnaire Hayes studied the internal consistency of the questions through Cronbach’s alpha coefficient and then studied correlations through Pearson coefficients. The next step he followed was performance factor analysis in order to study the possible underlying relationships between questions. The researcher considers that all the statistical analysis done by Hayes (1994) can be used to measure consumer empowerment.

There are also studies that have attempted to measure empowerment among consumers of mental health services. Corrigan et al. (1999), with their article “The construct validity of empowerment among consumers of mental health services”, created a questionnaire that aimed to measure these facets: self-efficacy, powerlessness, self-esteem, effecting change, optimism/control over the future, righteous anger and group/community action. In order to validate the questionnaire they spread the same questionnaire to the same respondents but with two weeks of separation in time in order to see if respondents give the same answers to the same questions. The statistical analysis they made consisted on a study of Pearson correlations, factor analysis and multiple regression using as dependent variables the factors obtained in factor analysis. The research considers interesting the use of multiple regression to predict consumer empowerment.

### **1.3 Consumer empowerment in the Internet Generation**

The Generation Z, also known as Internet Generation or multimedia Generation, is the name given to those born in between 1990 and 2009 coinciding with the birth of the WWW in the mid-90. They are the first generation to be born into a digital world. What distinguishes this generation from others is that they are the most electronically connected generation in the history. Generation Z has grown up by using graphical web browsers, laptops, cell phones, instant messenger, broadband, wireless and video games. Generation Z has been exposed to many high-tech influences, and today’s high-speed digital devices enable them to always be connected to the Internet. This connectivity allows them to communicate to others in real time regardless of physical location; to access diverse information and to author content instantaneously to web sites and weblogs. They are more likely than any previous generation to evolve into electronic multitaskers (Geck, 2006).

Generation Z also uses an arsenal of tools to manage, store, and protect information including e-mail, devices such as flash drives and iPods, and file transfer protocol systems. Adolescents

have successfully mastered technologies of e-mail to take full advantage of its gathering, organizing, and forwarding capabilities (Levin and Arafeh, 2002).

They often started using the Internet before having been given any sort of instruction on locating and evaluating web pages. However, they quickly figured out through trial and error that retrieved web results located at the top of a search web page are usually more important than web pages that appear on the bottom. They do not have a deep understanding of how Internet works or how commercial search engines rank results. They are just familiar with the tip of the Internet iceberg (Geck, 2006) although they benefit from the advantages of Internet. Those advantages, regarding consumer empowerment, can be summarized in the following figure:

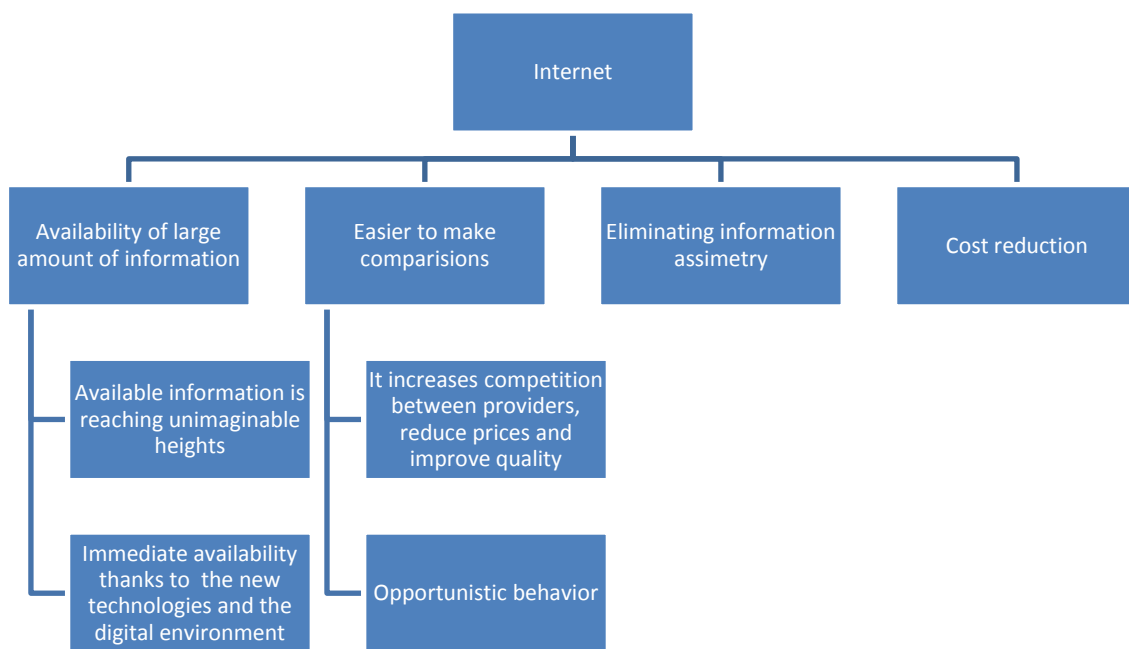


Figure 1. Benefits of the Internet (Mateo, 2009)

Although available information on the Internet is almost unlimited, individually consumer empowerment will depend on the consumer's capacity to separate useful information for different competing service-products that are offered, and to satisfy his/her needs with the least waste of time and effort. So, the degree of consumer empowerment depends on the number and quality of the propositions that are available in the market and on the consumer market knowledge. Finally, empowerment depends on the consumer own skills such as:

1. Ability to search for new market information. Empowered consumers manifest their power during the supplier selection process, by selecting one particular proposition or by rejecting an offer and continuing their search;

2. Consumers' ability to take advantage of alternative propositions. If customers perceive that they have alternative suppliers from which to choose, their zone of tolerance is going to be smaller than if they don't feel they have this flexibility;

3. Consumers' ability to share information between them. They can also gain power by forming a collective buying group, able to negotiate in better terms.

In addition, open economies or those without trade barriers would normally be expected to have high degrees of consumer empowerment (Pires, Stanton and Rita, 2006).

Empowered consumers are expected to manifest their power during the supplier selection process, either by selecting one proposition or by rejecting an offer. Before searching the product, the consumer has the idea of what is looking for and what are the expectations. So, the consumer is not willing to compromise and settle for inferior propositions below his expectations. Hence, consumer empowerment is based on higher perceived quality expectation thresholds during the decision making. Consumer's expectations also depend on the number of available suppliers. If the consumer has several alternatives, expectations increase, while they decrease if there is less choice. Not only consumer's expectations influence the decision-making process: added values such as free delivery, warranty and discounts may influence the purchase (Pires, Stanton and Rita, 2006). Consumer empowerment means that competition between suppliers intensifies, so that sellers not only need to have the best product, but they also have to offer these added values, which, in the long term, will increase expectations. In fact, those companies that encourage consumer power by offering multiple services and added values are those who also increase their demand (Pires, Stanton and Rita, 2006).

The creation of online communities and online consumer networks has also enhanced the level of consumer empowerment, because these networks allow consumers to share information about suppliers and products. These networks contribute to create expectations about quality, as the consumer can obtain product information from the provider and from other consumers (Shu, 2011). Sometimes, the advantage of these communities comes from the possibility of making a joint purchase. Buying together increases the power of demand versus supply causing a price reduction or getting an improvement in the purchase conditions. The proliferation of these collective buying groups does not mean that consumers have same preferences or that they search for standard products: in fact, one market trend is to offer increasingly customized products. The Internet fragments the market so that consumers have to be given what they want (Wei, Straub and Possar, 2011).

Fragmentation, however, does not necessarily imply less power for consumers. It creates the opportunity for suppliers to design personalized marketing strategies to provide products that suit consumer's needs. Between the different types of consumers, marketers focus on the ones that care about the quality but not too much on the price. This type of consumer is pampered

and even more empowered because his ability to pay for higher quality service-products (Pires, Stanton and Rita, 2006).

## 1.4 Search engines, decision making and satisfaction

In this section the researcher analyzes the process that a consumer on the Internet follows when making a purchase. It will be studied how consumers search on Internet, the buying decision-making process and the post-consumption satisfaction.

Empowered consumers may be expected to increase the demand for effective search engines, incrementing the competition on improving search engine effectiveness. More effective search engines should enable better consumer choice, hence greater consumer empowerment. Web traffic is channeled through more than 20 big search engines, but Fleishman-Hillard (2012) found that 89 percent of consumers turn to Google search engine to find information on products, services or businesses prior to making purchases. The study reveals the dependence on search for shopping research as a “key insight into the influence the Internet wields in consumers lives.” (Fleishman-Hillard and Harris Interactive Annual Global Study, 2012, p.3).

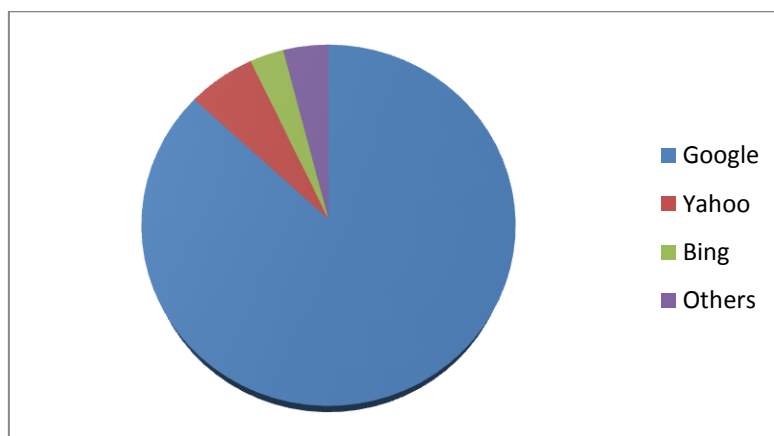


Figure 2. Search engine global market share (Hauptman, 2012)

It is easily seen that Google controls the monopoly of searches that consumers do online. Arthur (2013) found that the monopoly impoverishes the consumer search, because Google ranks its own products prominently in searches without warning users, and without applying their own criteria for establishing algorithmic results.

In fact, FairSearch platform, which brings together 17 companies worldwide in favor of equal conditions in the market for Web search, including Microsoft, urged the European Commission to take action against Google because they consider its position in Europe as abusing and dominant. According to FairSearch, Google performing practices go against European law and harm consumers in the sense that they believe that in the top of their search they will find the products "most appropriate" when actually they find a product that suits better for Google.

Specifically, FairSearch gave the example of several of its affiliates, such as TripAdvisor, Kayak or Expedia, specializing in travel searches, flights or hotels, ensuring be adversely affected by the position that Google gives them the results of their searches.

The conclusion reached is that the search engines, intermediaries between the companies that sell to consumers, impoverished consumer power on the Internet, by offering their own interest-based search, instead of basing the search on algorithms. Figure 3 shows the different roles performed by search engines in Business to Governments, Business to Business and Business to Consumers (B2G, B2B, and B2C respectively) markets.

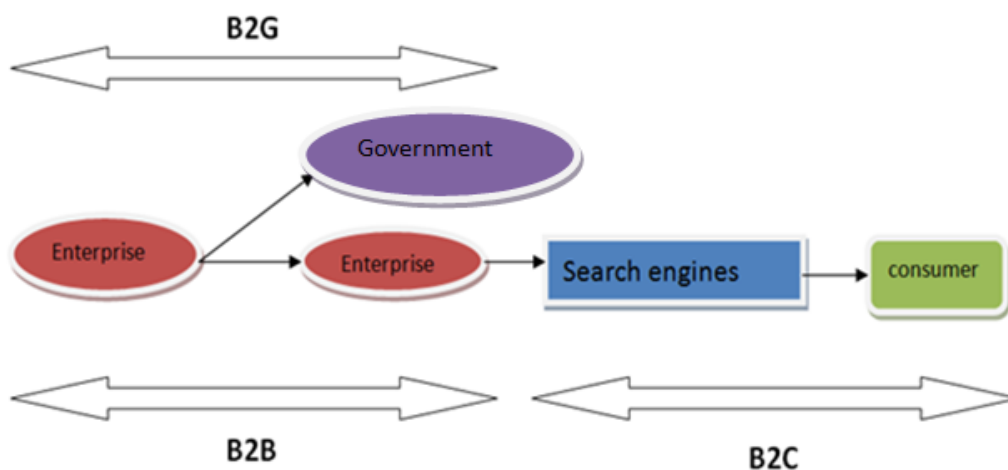


Figure 3. Role of search engines

Leaving aside the discussion, what all search engines have in common is the large amount of choices when it is introduced a few words on them. It is usually assumed that a larger choice set constitutes an improvement for the consumer. This is not always true, or at least it is ambiguous (Wathieu et al., 2002). For the consumer, it may be easier and less costly to choose between 10 items instead of 300 items. Iyengar and Lepper (2000) found that restricting a consumer's choice set to fewer alternatives appears to make decisions easier and leaves consumers more satisfied with the decision they made. Also, adding alternatives that differentiate along new dimensions may cause more overload than adding alternatives that differentiate along the same dimension (Wathieu et al., 2002). The ability of the consumer to specify or difference in categories the products is perceived as empowering. So, empowerment will be less driven by the size of the provided choice frame than by the consumer's ability to specify and adjust the choice context. As a conclusion consumer empowerment does not derive from a large amount of choices, it derives from the consumer ability in defining one's choices.

Once the choice is made and the consumer already knows where is going to buy the product the consumer usually has to select the features or characteristics of it. An online product selection should give consumers an indication of how long the process might take, as well as clear definition of the stages in the processes. As an example, consumers can feel annoyed or

frustrated when they are buying airline tickets and they do not know the steps that lead to a complete purchase. On the other hand, they may feel more empowered when they know how long it is going to take the purchase. And so with the price, consumers feel more safety when they know in advance the price of the product than if at the initial price suppliers are adding fees, shipping charges or taxes (Wathieu et al., 2002).

An empowerment feeling may also arise when consumers take into account the experiences that other consumers have had. Sometimes these experiences are biased by an interested party, so empowerment will depend on the buyer's ability to discern if the information is useful or useless. Another question would be if the consumer trusts the information provided about other consumers (Wathieu et al., 2002).

Finally, after searching and purchasing the product, one may wonder how satisfied is the consumer. Will always "empowered" consumers reach an outcome that is satisfactory? Langer (1983) showed that a perception of control in choice yields positive long-term effects in terms of satisfaction. Also, Koriat, Lichtenstein, and Fischhoff (1980) said that greater involvement in decision-making leads to better decisions. However, other evidence shows that consumers may sometimes have an impoverished understanding of what they will enjoy more at the time of consumption. Customer satisfaction also depends on how price-sensitive the consumer is. Sometimes, satisfaction does not depend on the price paid but rather on how this price is less than the price paid by other people for the same product. Loewenstein, Thompson, and Bazerman (1989) found that an individual customer satisfaction in negotiation varies on his or her outcome relative to their adversaries. On the other hand, satisfaction is not easy to predict or understand. Some authors suggest that consumers are often unable to accurately predict how satisfied they will be with future outcomes (Kahneman, 1994). As search engines become more accurate and more control tools are available, consumers raise expectations. Heath, Larrick, and Wu (1999) suggest that if consumers increase expectations, then they also hope higher results, while it may increase their possible disappointment (when consumers fall short of their goals). What consumers expect in relation to a product is always related to the clarity of the information given about it: price, appearance, shape and opinions or experiences of other consumers. Also, in the purchase decision process, the absolute confidentiality of the data provided by the buyer is important. The next figure describes what consumers expect and what are the relevant factors for the purchase decision:



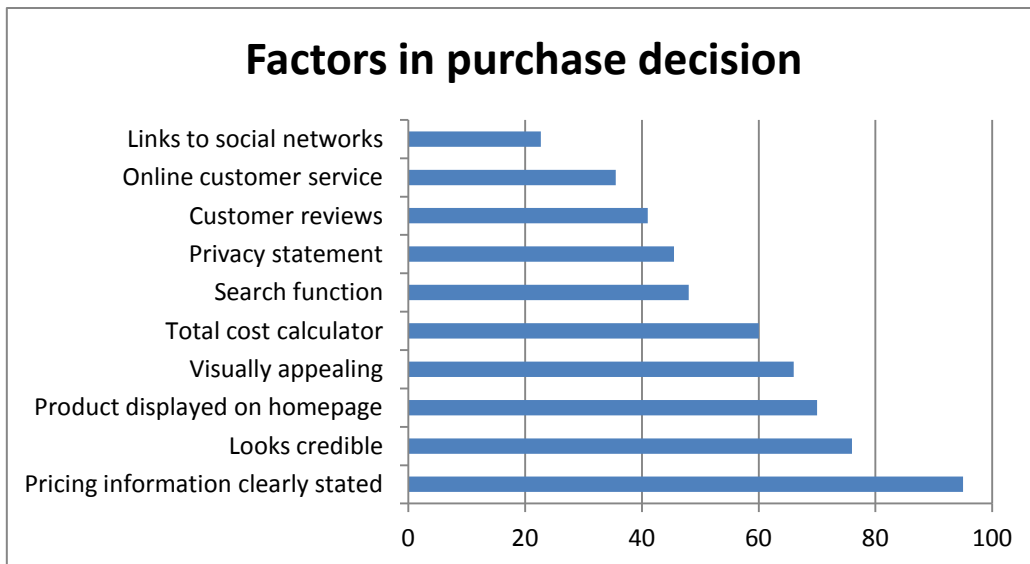


Figure 4. Influential factors in purchase decisions (Pew Research Center's Internet, 2014)

In a purchase over the Internet what consumers value most is clarity in the price. The credibility of the supplier comes the second and later a series of characteristics related to the layout and appearance of the webpage.

## 1.5 Trust and privacy on the Internet

The Internet is a communication channel that lacks physical means being only used through a digital device. Hence, some consumers do not trust Internet when buying a product. In this section the researcher will analyze issues related to privacy and the factors that encourage the consumer feel empowered and confident enough to buy over the Internet. Firstly, from the point of view of the company's trust and risk concepts, and secondly, from the veracity that consumers attribute to the opinions of their peers.

It was defined trust on the Internet store as a consumer's willingness to rely on the seller (Mayer, 1995; McKnight 1998). The difference between a physical sale and a sale on the Internet in terms of trust is that the source of a buyer's trust, the salesperson, disappears. Trust in the salesperson depends on the salesperson's expertise and likability. On the Internet context, the salesperson is replaced by a web (Lohse and Spiller, 1998), the web site places the relationship between the consumer and the merchant organization.

From the consumers' point of view, buying on the Internet generates a risk because the physical product is not seen and consumers have to trust on the seller, so trust and risk are closely interrelated (Mayer, 1995). Trust is the social lubricant that allows consumers to make a purchase. Basically, trust in a merchant mitigates the consumer's perception of risk involved in a purchase situation (Jarvenpaa and Tractinsky, 1999).

Risk is defined as a consumer's perceptions of uncertainty and adverse consequences of engaging in an activity (Dowling and Staelin, 1994). The Internet is an open, global and constantly changing channel. Moreover, the channel makes it hard to inspect physical goods. All these reasons may increase the uncertainty, and consequently the perceived riskiness of shopping on the Internet. When risk is present, trust is needed to make the transaction possible. That is, higher consumer trust towards the web store will reduce the perceived risks associated with buying from buying through the Internet (Jarvenpaa et al., 1999).

Reputation and brand name are most frequently suggested as factors that contribute to consumer trust (Dawar and Parker, 1994). The long-term reputation of the seller is more important than short-term product quality movements. Reputation and size provide assurance of the seller's ability and integrity, particularly when the consumer has not purchased before and hence do not have first-hand knowledge of the seller (Jarvenpaa et al., 1999). Besides the reputation and size, there are other aspects of the website that influence the trust between the consumer and the merchant organization. These might include the degree of personalization of the site for the customer, the geographic closeness of the seller to the consumer and the existence of a physical store. Additionally, consumers are likely to rely on their past experiences (McKnight, 1998).

In conclusion, Hoffman (1999) argues that the lack of trust is stopping a large number of people from engaging in commercial transactions on the web, but on the other hand, a large number of consumers trust on the Internet information more than in any other media channel (see figure 5).

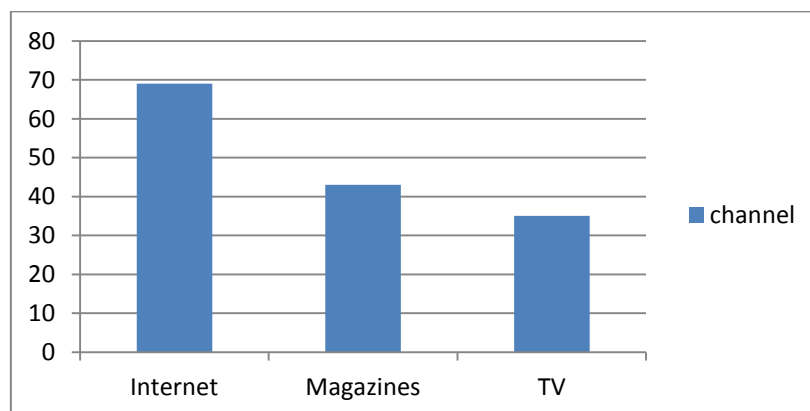


Figure 5. Trust on different media, percentage (Marketing proofs, 2006)

Sometimes it is not about trust or not, it is simply ignorance. If consumers do not know the provider on the Internet they usually tend to ask their peers. This is common when a person lacks of experience in Internet shopping and for that reason he or she usually looks at the experiences that others have had, especially those experiences that are close to the consumer (family and friends). If those opinions are not enough, then the consumer can also look on the Internet for more opinions or reviews about a product or provider made by others consumers.

This access to the information empowers the consumer, but the question is if that information is true and if the consumer believes in it. Figure 6 illustrates, in percentage, customers reliance on Internet reviews by age.

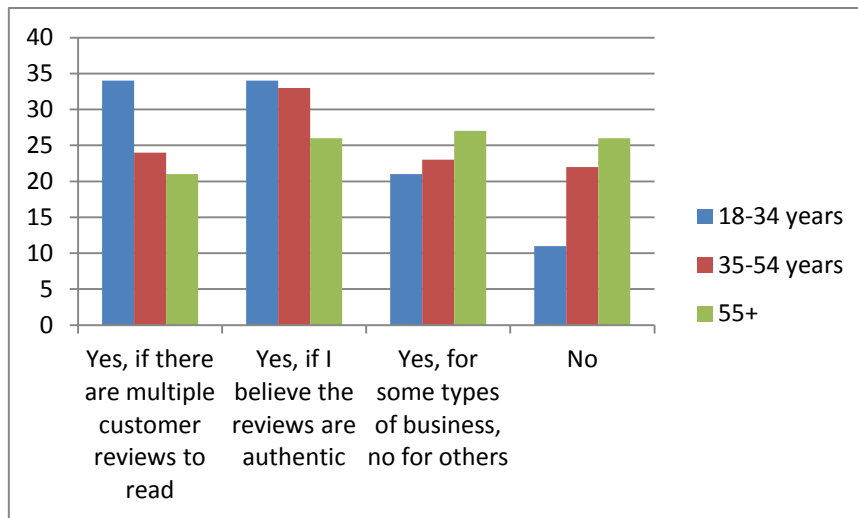


Figure 6. Do customer trust on customer reviews as much as personal recommendations? Percentage vs Age (Anderson, 2013)

In terms of trusting Internet providers, while for many it is important the reputation of the brand or the reports of other consumers, some consider that the most important factor is the privacy policy. Some privacy policies ensure data protection but it often happens that personal data is used for marketing purposes. As the Internet has raised expectations of products and services on demand, brands have to work even harder to get noticed by creating new customized products (Bhattacharjee, 2001). In order to create these products, the brand must know its market segment and customers. The market segment is not sometimes easy to figure out and that is why some companies purchase personal data to decipher the profile of the consumer who buys their products. This practice is on the edge of legality and threatens consumer privacy on the Internet.

Every time consumers go online they leave behind a data footprint. While this represents an opportunity for suppliers, it also raises issues of privacy and data protection. If brands can make clear why they need a consumer's details, most consumers will give some data details, only if that data is not going to be used for other purposes. If this data is used to create personalized online experiences for the user, the consumer gains on power, but on the other hand, if the data is used for marketing purposes, the consumer is losing in terms on privacy and therefore consumers are impoverishing their power (Gómez, 2011).

First of all, it can be discussed how personal privacy is threatened by some activities on the Internet. According to the study of Pew Research Center (2013), almost 63% percent of Internet consumers were concerned about privacy on the Internet and this figure is growing year by year

(see figure 7). This means that the consumer feels that privacy is threatened by some activities on the Internet which inevitably lead to a loss on confidence and trust on marketers. Known as ad tracking, the practice uses unique cookies in Web browsers, subsequently transmitting information back to the entities behind the delivery vehicle, be it banner, pay-per-click, or email advertisement. These cookies sometimes collect information about consumers useful for marketing research and behavioral consumer that marketers do (Riofrio, 2013).

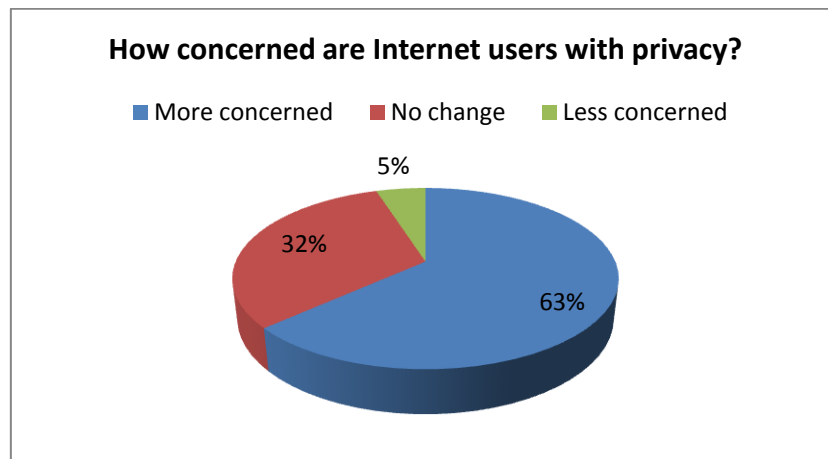


Figure 7. Internet users' growing privacy concerns (Pew Research Center's Internet, 2014)

Although it seems that data from a consumer is stolen, Gómez (2011) argues that the first threat that the consumer faces in terms of privacy is the consumer himself. Sometimes consumer reveals information in private networks (Facebook, Twitter, ...) and sometimes in public networks (blogs, chats, ...) easily accessible to everyone on Internet. Consumers are the biggest impediment to their own online privacy, and can easily expose sensitive data if they don't maintain a certain degree of vigilance in their digital behavior. Consumers on the Internet have to be careful with the programs they install, who has access to login information, which online entities have personal data and how much they have.

Figure 8 shows that a photo of somebody can be found on the Internet in more than 60% of cases while the e-mail address percentage decreases to 50%. Even the groups and political parties one belongs to or your mobile phone appears available online in more than 20 % of the cases.

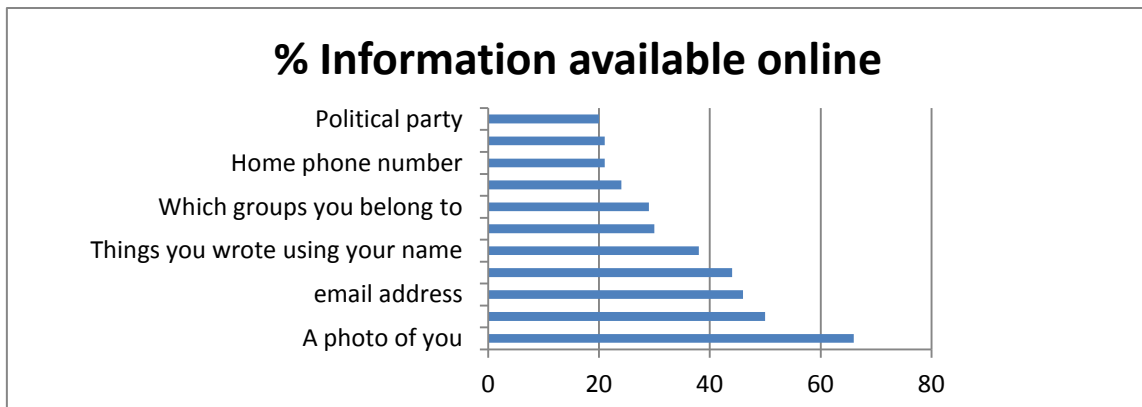


Figure 8. Personal information online (Pew Research Center's Internet, 2014)

Another threat may be the government, depending on the legislation on personal data. If the government considers that a consumer behavior on Internet is harmful to the interests of the nation, the government can break the rules that protect the privacy of individuals (Goldsmith and Wu, 2006). For example, in 2006, the government of United States asked a federal judge to compel Google, to turn over records on millions of its users' search queries as part of the government's effort to uphold an online pornography law.

## 1.6 Impact on brands

Consumer empowerment is the condition to achieve consumer activism goals in markets. The fact that consumers are often organize in sites is a clear manifestation of consumer power (Pitt et al., 2002; Urban, 2004). The Internet enables consumer empowerment on technological, economic, social and legal dimensions (Kucuk and Krishnamurthy, 2007). Technological empowerment comes from the egalitarian and decentralized information architecture of the World Wide Web that allows individual consumers to create their own media spaces (e.g., blogs, websites) to express their views effectively to a target audience (other consumers). Thanks to information access, consumers try to access to the best value in the markets. Socially, the Internet enables social interaction and organization building a collective social identity (Bagozzi and Dholakia, 2002).

Thanks to consumer empowerment in all these aspects, the opinion of the consumer about a product has value for a company. On one hand, good comments about a product could be read by thousands of online consumers, which could increase the company sales and the brand image. On the other hand, bad comments can destroy the brand's image. For all these reasons companies have created the community manager figure. The role of the community manager is to analyze, understand and address the information produced for social networks. They take into account the opinion of the consumer, where the brand has failed and where it has

improved. A community manager also contacts final consumers trying to solve any problem faced by them.

Empowered consumers have three types of websites to express their satisfaction or upset about a product: complaint forum, product evaluation forum and anti-brand sites (Bailey, 2004). Complaint and product evaluation forums involve social interaction among the customers of a corporation (Godes et al., 2005), while anti-branding sites are different in their purpose and structure. The community manager works in the first two. The company usually fights in courts the anti-brand websites.

Complaint forums are web sites where consumers post public or private comments about a purchase (Bailey, 2004). Public comments provide other consumers information about the product that might be useful. Thus, complaint forums provide consumers with a platform to give voice to specific complaints about one company or product (Hirschman, 1970).

Product evaluation forums are spaces where consumers can evaluate the quality of a product or service (Mayzlin and Chevalier, 2006). These product reviews provide accuracy information of the product and reduce the uncertainty of others' purchases by improving the efficiency of their search (Hennig-Thurau and Walsh, 2003). Online product reviews are based on electronic word-of-mouth (Mayzlin and Chevalier, 2006) that facilitate social interaction among consumers.

In contrast to these two forums, the anti-brand sites try to affect individual consumption through the construction of a negative brand identity. This focus makes them different from complaint forums, which focus on the dissatisfaction in a purchase and product evaluation forums, which focus on product quality. Anti-brand sites use visual expression and critical language to create a negative online identity for the targeted brand.

Anti-branding sites are a negative outcome of the consumer empowerment. These pages just want to damage and destroy the brand image of a company. They are in the limit of legality. The tradeoff between the intellectual property rights of the firm and the free speech rights of citizens is sometimes not well defined by laws. For example, the American law protects such sites because they do not generate a profit (Krishnamurthy and Kucuk, 2008). Some studies inform that these types of web sites are becoming common. One study reports an increase in such sites from 550 at the end of 1997 to 10,600 in December 2004 ([www.mi2g.net](http://www.mi2g.net)). Some companies have also bought defamatory domain names (e.g., Volvo's [volvosucks.com](http://volvosucks.com), Chase Manhattan's [chasesucks.com](http://chasesucks.com) and Exxon's [exxonsucks.com](http://exxonsucks.com)), which can hinder the brand name.

## 2 Methodology

The possible methods that can be used are mainly empirical, statistical and theoretical methods (Meléndrez, 2006). Empirical research is based on observed and measured phenomena and derives knowledge from actual experience rather than from theory or belief. Data collected in this way is referred to as empirical evidence which is subjected to qualitative and quantitative analysis methods and then used to answer empirical questions (Amsberry, 2008).

Empirical methods allow the collection and processing of empirical data and knowledge of the basic facts that characterize the basis of the study. Empirical research produces descriptive data inferred from words spoken or written and observable behavior in the study group. Statistical methods play a significant role, contributing to determine the sample of the target group, study the empirical data obtained and establish appropriate generalizations from them (Meléndrez, 2006).

In order to study the empirical data the implementation of different procedures may be necessary because it allows identify trends, regularities and relationships in the target group. Thus descriptive and inferential statistic methods become important (Weiss, 2012).

### 2.1 Data collection

In this thesis the empirical data will be obtained via a self-administered questionnaire. The channel chosen to administer the survey was the Internet since this thesis wants to capture the views and perceptions of the Internet Generation. The advantage of online surveys is that the respondent can answer at the time and place of his or hers choice, and by offering a more convenient way of answering the questionnaire, the response rate might be enhanced. Another advantage is that it prevents the interviewer to somehow influence the interviewee (Díaz de Rada, 2010).

The survey through the Internet can be conducted in different ways. The questionnaire can be attached to an email or the email can contain the link to a webpage, among other options (Brace, 2008). For this thesis it was decided to use Google docs as this platform is free, easy to understand and develop the questionnaire and the results can be exported to Microsoft Excel. Another point in its favor is that it allows anchoring with numbers all the scale points plus a descriptive anchor at the endpoints of the scale. Below it appears an example of a statement and the scale of agreement in Google docs:

The Internet facilitates expressing one's thoughts and feelings

	1	2	3	4	5	6	7	8	9	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

The platform uses a link that can be posted or attached in Twitter, Facebook and e-mail to spread the questionnaire. As it can be seen the answer options were organized horizontally. However, according to Bryman (2008), the vertical format is sometimes use by researchers, for clarity, but as long as it was decided to work with a nine point scale the vertical format would be so long that the respondent could stop answering the questionnaire.

Once the survey is conducted the results can be exported to Microsoft Excel format. The data collected was analyzed with the software SPSS IBM. The analysis of the data was done through descriptive statistics and multivariate data analysis, including cross-tabulation, factor analysis and multiple and logistic regression.

## **2.2 Population**

The term Population refers to a study group. This group needs to have in common a number of characteristics that make them different from others groups. When we define this population we begin to talk about target group (Weiss, 2012). For this project the population was defined as those born between 1990 and 2009 mainly in Portugal and Spain. The study specifically refers to people of the city of Lisbon and Madrid as long as its author is from Madrid and is writing the thesis in Lisbon. In the metropolitan area of Lisbon live around 547.631 people. Those who study at the Instituto Técnico de Lisboa represent the sample studied of the Portuguese population. On the other hand, inside the Spanish population the range of possibilities varies from Spanish Erasmus living in Lisbon to students of the Polytechnic University of Madrid living in Madrid.

## **2.3 Construction of the questionnaire**

The purpose of the questionnaire is to translate research variables into facts that can be quantified and measured. The questionnaire should be designed from several hypothesis, however, it has to take into account the characteristics of the population (educational level, age, socio-economic aspects, among others..) because these aspects are critical to determine the type of questions, number, language and format response (Casas et al., 2003).

The questionnaire should be in English as the thesis is written in English, but as the study group is mainly Portuguese and Spanish there were three versions of the questionnaire: one in English, one in Portuguese and other in Spanish. The questionnaire should be as short as possible. If it is short and the instructions are clear it may increase the questionnaire's response rates (Bryman, 2008). Therefore, to maximize the response rates special care was taken regarding the clarity of the questions, the length of the questionnaire and an incentive was given to respondents (respondents could choose to enter a draw of a smartphone). The literature refers the effectiveness of such incentives (Malhotra and Birks, 2003) to increase the potentially low response rate.



### 2.3.1 Type of questions

The type of questions can be open and closed questions. Depending on the objectives pursued, questions can also be divided into two broad groups: those that serve to obtain information concrete and those used to see the development of the survey, such as filter questions (Borges del Rosal, 2013). Since the survey was done through the Internet, it contained only closed questions. This option attempted to simplify the answering process for the respondent, something considered essential for obtaining adequate cooperation in self-administered questionnaire surveys (Tull and Hawkins, 1993). Closed questions can be dichotomous, multiple choice and scales. In the dichotomous questions two response alternatives are presented, usually yes or no. Sometimes, it also allows a third option: do not know / no answer (Borges del Rosal, 2013). It was decided to avoid the answer "I do not know" to force the respondent choose between the two possible alternatives.

The ambiguity in the multiple choice questions should be prevented so that the respondent always knows what the interviewer is asking (Borges del Rosal, 2013). For example for the question, how often do you use Internet? The possible answers cannot be much or little because for one respondent much can be twice a week while for other can be every day of the week. In this case in order to avoid ambiguity the possible answers should be quantitative.

As the thesis wants to measure attitudes it was decided to use Likert scales for this purpose. Hair et al. (2006) point that Likert scales are appropriate when surveys are self-administered. Borges del Rosal (2013) explains that a Likert scale is a non comparative scale that allows the respondent to assign the score that considers most appropriate. Borges del Rosal (2013) also advises that the researcher should try to be neutral regarding the problem under study, no positioning of any way in the treatment of the question. It is also preferable to avoid writing negative questions, because the respondent may not understand them as well as those formulated positively.

The Likert technique is one of the most commonly used to measure attitudes. In this thesis, empowerment is understood as a set of attitudes that lead the consumer gain perceived and real power when using the Internet. It presents a set of positive and negative statements and the respondent is asked to show the level of agreement or disagreement with each statement. Likert scales may have a neutral or midpoint. Some studies argue that social desirability bias arising from the respondents' desire to give a social acceptable answer could be minimized by eliminating the midpoint (Garland, 1991). On the other hand, Matell and Jacoby (1972) came to the conclusion that when the number of scale points is increased, respondents' use of the midpoint decreases. In their study, they found that an average of 20% of respondents chose the midpoint in scales of 5 points whereas only an average of 7% of respondents scored the midpoint category when it comes to seven, nine or more scale formats. Other authors studied how the midpoint pushes the respondent towards the positive or negative part of the scale. Worcester and Burns (1975) found that a four point scale without midpoint seems to push more

the respondents towards the positive end of the scale than a five point scale that includes midpoint. The explanation they came to is that respondents, when there is no midpoint, tend to please the interviewer in what it appears to be the right answer or what it is supposed to be helpful for the interviewer.

It was decided to use a midpoint in the scale of agreement and in the scale of frequency. The Likert scale of agreement has 9 points (from question Q1 to Q10) while the frequency scale contains 7 points (from question Q11 to Q17). The scale of importance used is a 6 point scale (from question Q24 to Q27). The scale of importance had no midpoint to force the respondent to answer in one direction since it is used to measure social values whose questions may be considered intrusive and where the respondent could use the neutral point as a way out of answering the question.

It has been largely discussed the number of categories, points or steps in scales. Initially, Likert (1932) developed the scale with 5 points, from 'strongly disagree' to 'strongly agree' with a midpoint corresponding to a neutral position. Over time scales have been developed using more than 5 categories but what really matters is not the length of the scale, but as how it affects to reliability, validity and sensitivity. Reliability is the degree to which an assessment tool produces stable and consistent results while validity refers to how well a test measures what is supposed to measure (Colin and Wren, 2006). Sensitivity or true positive rate is the proportion of actual positives which are correctly identified as such. It is commonly accepted that increasing the intermediate points makes the answer more accurate since the set of options given to the respondent increases. For example, Diefenbach et al. (1993) found that a 7 point scale was more sensitive than a 5 point scale, while Russell and Bobko (1992) found that data from a 15-point scale increased regression analysis effect sizes by 93 percent over those from a 5-point scale. Also, Jaeschke and Guyatt (1990), in the context of medical scales, explained that 5 point scales do not provide sufficient sensitivity to detect small, clinically significant differences.

Some authors (for example, Bardo and Yeager, 1982) have concluded that scale reliability decreases as the number of choice-points exceeds two, while Cummins and Gullone (2000) point that expanding the number of points from 5 to 7 points does not systematically damage reliability. Cicchetti et al. (1985) extended this range to more than 7 points by using Montecarlo methodology, founding no evidence that gradual increases beyond 7 points harm reliability. For them such finding implies no impediment to the development of more complex large scales from consideration of reliability. As long as the literature review does not give a general rule about the length of the scale it was considered that scales of more than 5 points could be used in this thesis.

Regarding the coding of the responses, it was decided to assign '9' to "strongly agree" and '1' to "strongly disagree" since all the statements are written in a positive way. The scale of frequency had 7 points with '7' corresponding to "always" and '1' corresponding to "never". In the scale of

importance, '6' represented "the most important" and '1' to "the least important". Dichotomous questions were coded as 1 or 0.

Borges del Rosal (2013) recommends that questionnaires should begin with a brief introductory message where it is detailed who conducts the survey, the statement of the research objectives, the type of information required and the procedure followed for sample selection, motivating the respondent with the benefits he or she can achieve with his or her participation. In addition, this introduction should ensure the protection of their privacy, guaranteeing the anonymity of their reviews. This information and clear instructions are absolutely essential in the case of self-administered questionnaires.

Regarding the structure of the questionnaire, the flow of the questionnaire has to be logical. Questions relating to the same subject must be submitted together forming a set of common questions. Difficult or sensitive questions are reserved for the end of the questionnaire in order to avoid a negative reaction in the following questions. The exception, when sensitive or personal questions appear first is when these questions are used as a filter (Borges del Rosal, 2013). Again, all the procedures described intended to maximize the response rate.

It was decided that the questionnaire should be divided in 4 parts: e-empowerment (Q1 to Q10), consumer empowerment (Q11 to Q23), power values (Q24 to Q27) and demographic information (Q28 to Q33).

To minimize respondent's fatigue, the section on demographic information was placed at the end of the questionnaire, as probably these questions are considered 'easy-to-answer'.

From hereafter, the questions are identified with the number that corresponds to their order in the questionnaire. Appendix 3 includes the three versions of the questionnaire: in Portuguese, in Spanish and in English.

The rest of the methodology chapter describes in detail each question and statement and why they are relevant in the questionnaire.

### **2.3.2 E -empowerment**

This section intends to collect data on how consumers use Internet and the different attitudes that a user can develop thanks to the Internet.

Before measuring consumer empowerment it would be interesting to measure what is the Internet user empowerment. Amichai et al. (2008) call this effect E-empowerment and they decompose this concept along four levels: the personal, the interpersonal, group and citizenship levels. In the questionnaire it was decided to create 10 statements that aim to measure these four levels of E-empowerment. Shaughnessy and Zechmeister (1994) advise caution when attitudinal and behavioral questions are used. The respondent has to agree or disagree with these statements in a 9 point Likert Scale (from 'Strongly disagree' to 'Strongly agree').

The personal level refers to the ability of reframing and making changes in personality and increase self-efficacy. It is explained by Amichai et al. (2008) through the idea of creating, developing or improving the profile of the individual that is easily validated in the Internet environment whereas it could be difficult accepted outside the web. As Ozer and Bandura (1990) point, social skills may improve in mastery situations where individuals can acquire and practice their social skills in a non threatening environment. In these situations, if the individual fails there is no significant cost. For example, the possibility of communicating anonymously online may reduce the sense of threat or the fear of not being accepted by others. Personal level is measured by Q1 and Q2:

- Q1: The Internet facilitates expressing one's thoughts and feelings.
- Q2: The Internet improves my social skills.

The interpersonal level is related with the strengthening of existing relationships or the creation of new ones. Amichai et al. (2008) point that the ability of people with poor social skills to use Internet successfully to form relationships constitutes a demonstration of E-empowerment. They also explain that in the Internet individuals disclose intimate information easier than in face to face situations and this enables them again to build enduring relationships. This phenomenon is based on the idea that in face to face interaction it is necessary to first build trust to disclose personal information whereas in the Internet this barrier is significantly reduced. In this way, individuals gain in sociability increasing also dialogue and contact between individuals from different cultures or religions. For Mackenna et al. (2002), Internet unique conditions also reduce stereotypes. In face to face situations first impressions such as appearance may become a barrier to a potential relationship, while on the Internet first impressions are formed in a different way. As the physical features disappear on the Internet, impressions are formed by opinions expressed and information revealed. Q3, Q7, Q4, Q8 measure interpersonal level in the questionnaire:

- Q3: Thanks to the Internet I keep contact with some friends that otherwise I wouldn't be in touch.
- Q7: I consider that the Internet makes me more sociable.
- Q4: The Internet eliminates cultural and religious barriers.
- Q8: The Internet reduces stereotypes because I do not see the person I write to.

The third level of E-empowerment, the group level, is intimately allied to the sense of belonging to a group. While searching and finding peers in face to face situations can be difficult, Internet forums and blogs offer the possibility of meeting new people with the same tastes and preferences. For Mackenna et al. (2002), being a member of a group reduces the feeling of loneliness, while for Tajfel and Turner (1986) belonging to a group that shares common interests and goals enhances self-esteem. Amichai et al. (2008) also consider that group participation may increase self-acceptance and reduce alienation thanks the capacity to expose

and share ideas with the different group members. Q5 and Q9 aims to measure the characteristics of E-empowerment in the group level.

- Q5: It is possible to meet people similar to me on forums, blogs and social networks.
- Q9: I feel I belong to some kind of group on the Internet.

The last level Amichai et al. (2008) defined is the citizenship level and it refers to the interaction between government and citizens through the Internet. It encompasses the possibility to vote through the Internet, express opinions and complaints on political issues or even the creation of pressure groups (lobbies) that may change the politics of a country if strong enough. These aspects are evaluated with statements Q6 and Q10:

- Q6: I can help to improve the politics of my country through the Internet.
- Q10: I consider voting through the Internet is a useful tool.

### 2.3.3 Consumer empowerment

The Consumer Empowerment scale was constructed based on the Special Eurobarometer 342 (TNS Opinion and Social, 2011) and the work of Nardo et al. (2011) that divide consumer empowerment in 3 main pillars: Consumer skills, Awareness of consumer legislation and Consumer engagement. These pillars were also used in this thesis. Figure 9 categorizes the different facets of consumer empowerment, with the main pillars decomposed into more specific aspects.

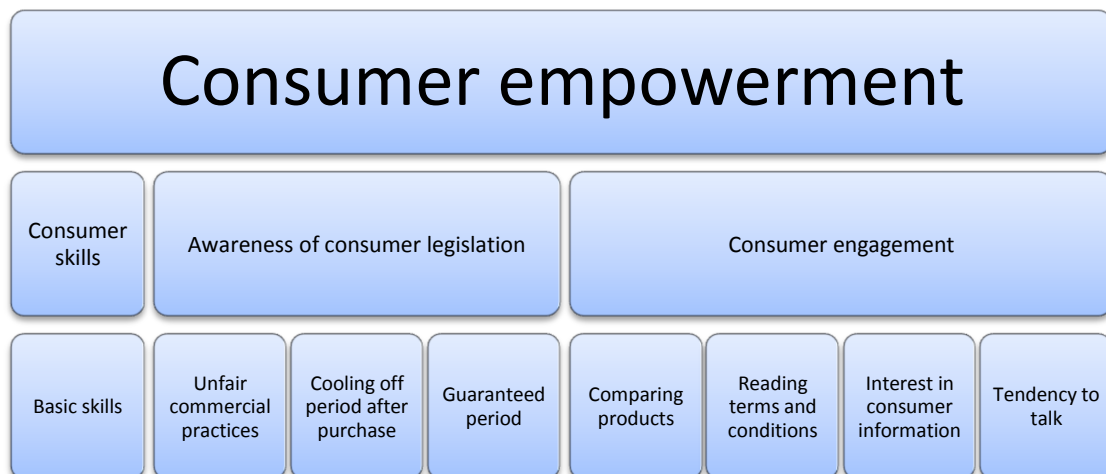


Figure 9. Framework of Consumer empowerment (Nardo et al., 2011)

As in Nardo et al. (2011), the questions from the Eurobarometer were adapted to the Internet context. Therefore, the third part of the questionnaire contains 13 questions related with the three pillars that, according to the Eurobarometer, define Consumer empowerment.

The first pillar concerns Consumers Skills. This pillar tries to measure the ability to do arithmetic operations that are necessary for consumers to make purchase decisions. In the questionnaire,

this aspect was measured with Q11 that evaluates the ability to do percentages that are useful to calculate discounts, loan and costs:

- Q11: If computer A costs 111 euro and computer B costs 100 euro + 18% sending cost, which one is cheaper?

The pillar Awareness of consumer legislation is divided in 3 sub-pillars: Unfair practices, such as providing untruthful information to consumers or the use of aggressive marketing techniques to influence their choices, cooling off period that is the period of time following a purchase when the consumer may choose to cancel a purchase and return the goods, for any reason, and obtain a full refund, and guaranteed period which is the period of time for which the producer guarantees the stability of the quality of the article. The pillar aims to describe the knowledge of EU consumer legislation related to unfair commercial practices, length of guarantee rights validity, cooling-off period in distance or doorstep selling. The dimensions covered and respective questions are:

- UNFAIR PRACTICES
  - Q12: Imagine you receive by post a DVD that you have not ordered, together with a 25 Euros bill for the products. Are you obliged to pay the bill?
  - Q20: Imagine an advertisement saying: "Free alarm clock, just call this number to collect it". You call the number and later you discover that it is a very costly premium rate telephone number. Was the advertisement legal?
- COOLING OFF PERIOD
  - Q17: Suppose you ordered a good by post, phone or the Internet, do you think you have the right to return the good you ordered 4 days after its delivery and get your money back, without giving any reason?
  - Q19: Imagine you purchase car insurance over the telephone, the internet or by post. Two days later you find a better deal with another provider and you decide to cancel the original contract. Do you have the right to do that?
- GUARANTEED PERIOD
  - Q14: Imagine that a new washing machine you bought 14 months ago breaks down. You didn't buy any extended commercial guarantee. Do you have the right to have it repaired or replaced for free?

The pillar of Consumer engagement gathers different aspects of consumer behavior. The attitude in 'Comparing products' tries to measure the effort consumers make in obtaining information on products. In this sub-pillar, it is also focused the consumer attention to price differences. The sub-pillar 'Consumers habits when reading terms and conditions' aims at understanding consumers' behavior when they sign contracts. The sub-pillar 'Interest in obtaining information on consumer rights measures the attitude of consumers when looking for information on their rights.

- COMPARING PRODUCTS

- Q13: When buying a product, how often do you compare the prices of the different brands available?
- Q15: How often do you compare the price of primary goods by looking at the price per unit measure for example, price per kilo, per meter or per liter?
- **READING TERMS AND CONDITIONS**
  - Q18: How often do you read terms and conditions when you purchase a product or a service?
- **INTEREST IN INFORMATION**
  - Q21: How often do you listen to programs on the TV (and radio) providing information on consumer rights?
  - Q22: How often do you search for information on your rights as a consumer?
- **TENDENCY TO TALK**
  - Q23: As a consumer, if you have a bad experience related to a good, a service, a retailer or a provider, how often do you recommend others against purchasing this product or service?
  - Q16: As a consumer, if you have a good experience related to a good, a service, a retailer or a provider, how often do you recommend others to purchase this product or service?

The questions that form e-empowerment and consumer empowerment of the questionnaire were randomized to avoid respondent's fatigue and also to avoid a mechanical type of response if items were considered too close in meaning (contamination effect).

#### **2.3.4 Power values**

It was decided to include 4 questions about personal values related to power in order to understand the role of the individual valuation of power on consumer empowerment.

Schwartz's theory of basic values (2012) identifies 10 motivationally distinct types of values and describes the relations between them. The Schwartz values system (SVS) has been assessed in almost 100 countries around the world, confirming the structure of the relationships between values. This also demonstrated the adequacy of the values to be researched in cross-cultural studies.

The values that are interesting for this thesis are those related to empowerment. Power values define social status and prestige, control or dominance over people and resources. Power values may be transformations of individual needs for dominance and control (Schwartz, 2012). In this sense, it was thought as interesting to explore the relationship between this need for dominance and control, and the consumer empowerment perception. According to Schwartz (2012), power values emphasize the attainment of a dominant position within the social system. The items included in the questionnaire follow the scale defined for the value survey (Schwartz

et al., 2012), in which power values are divided into two sub-dimensions: power resources and power dominance.

Power resources are described with the items Q24 and Q25 “Having the feeling of power that money can bring” and “Being wealthy” respectively. Power dominance includes the items Q26 and Q27 “Having people doing what I say” and “Being the one who tells other what to do”. Questions 24 and 26 are also included in the European Social Survey questionnaire.

### **2.3.5 Demographic Information**

Demographic questions allow the comparison of consumer empowerment along different demographic groups. As the questionnaire is self-administered and anonymous, the questions about the age and the gender may be considered intrusive, but these intrusive questions are useful to make sure that the respondent is really interested in participating in the survey (Brace, 2008). Moreover, Ortega (1990) states that the interviewer can ask questions on any topic, however, the way to answer the question will produce different results. The different between the gender, the nationality and the age may reveal different tendencies regarding to consumer empowerment.

This part of the questionnaire is composed of 6 questions: Q28 splits age in two: those who belong to the Internet Generation (under 25 years old) and those who belong to other generations. Nationality (Q29) and gender (Q30) provide useful information to distinguish Consumer empowerment in different categories. Question 31 asks about the usage frequency of the Internet, considered relevant information to the study. Q32 is relevant since it can evaluate if those who have completed more years of education are those who experiment more levels of empowerment. Regarding education, and taking into account that the different countries may have different educational systems, it was decided to ask for years of full-time completed education. It is considered that in surveys for cross-country comparison, the best way to measure the educational level of the respondent is to ask for years of schooling (Hoffmeyer-Zlotnik and Warner, 2006). The European Social Survey uses the same question to evaluate the education of the respondents.

### **2.4 Questionnaire pre-test**

The questionnaire must be tested before being administered. Hair et al. (2006) recommend that questionnaires are pre-tested in two waves. In the first wave, the interviewer has to be physically present in order to write down any doubt the respondent may have. Once some changes are made in the questionnaire according to first wave, in the second wave there should not be any doubts and the questionnaire should be perfectly clear. Testing the questionnaire is important since the way of interpreting questions may vary depending on who reads it.



The questionnaire was pre-tested among 13 people, including different nationalities such as German, Portuguese, Spanish or Italian and different ages. In the first wave their comments were taken in account and some questions were modified according to the suggestions made for some respondents. In the second wave, the questionnaire was pre-tested among 6 people and it was concluded that the questionnaire was clear in its instructions and layout, and so, ready to be administered.

## 2.5 Statistical techniques

This section provides a brief explanation of the techniques that were used in SPSS to analyze the data. It is focused on the theory and this part may be thought as an introduction for the results that appears in the next chapter.

### Naming variables

In SPSS its question (Q) of the questionnaire is a variable and thus it has a name. The name will appear here in capital letters

10 variables for e-empowerment:

- Personal level (Q1,Q2)
  - PERSONAL1, PERSONAL2
- Interpersonal level (Q3,Q7,Q4,Q8)
  - INTERPERSONAL1, INTERPERSONAL2, INTERPERSONAL3, INTERPERSONAL4
- Group level (Q5,Q9)
  - GROUP1, GROUP2
- Citizenship level (Q6,Q10)
  - CITIZENSHIP1, CITIZENSHIP2

13 variables for consumer empowerment:

- Basic skills:
  - CONSUMERSKILLS (Q11)
- Consumer engagement:
  - COMPARINGPRODUCTS1, COMPARINGPRODUCTS2 (Q13,Q15)
  - READINGTERMSANDCONDITIONS (Q18)
  - INTERESTININFORMATION1, INTERESTININFORMATION2 (Q21,Q22)
  - TENDENCYTOTALK1, TENDENCYTOTALK2 (Q23,Q16)
- Awareness of consumer legislation
  - UNFAIRPRACTICES1, UNFAIRPRACTICES2 (Q12,Q20)
  - COOLINGOFF1, COOLINGOFF2 (Q17,Q19)
  - GUARANTEED (Q14)

4 variables for power values:

- Power resources
  - POWERRESOURCES1, POWERRESOURCES2 (Q24,Q25)
- Power dominance
  - POWERDOMINANCE1, POWERDOMINANCE2 (Q26,Q27)

The 6 questions about age, nationality, genre, use of internet, years of education completed and occupation were named in SPSS as age, nationality, gender, userofinternet, educationcompleted and occupation (Q28,Q29,Q30,Q31,Q32,Q33 respectively). Age were coded as a binary variable (1 if the respondent belongs to the Internet Generation, 0 if not). Nationality was coded with the value 1 for Spanish, 0 for Portuguese, and gender was coded as 1 for male respondents and 0 for female respondents. Those questionnaires whose respondents were not Portuguese or Spanish were discarded when the analysis required a comparison between Portuguese and Spanish.

#### Factor analysis

As an exploratory tool that allows a better understanding of the data structure, it was decided to perform a factor analysis. Hair et al. (2006, p.90) described factor analysis as a tool “utilized to examine the underlying patterns or relationship for a large number of variables and to determine whether the information can be condensed or summarized in a smaller set of factors”. So the idea is that factor analysis provides sets of variables highly related, known as factors that can be thought of as a block of relationships. Factor analysis’ purpose can be exploratory or confirmatory and it makes no distinction as to independent or dependent variables. As long as the questionnaire is already divided in blocks it was decided to use factor analysis four times: one introducing all the variables, one using the variables of e-empowerment, other using the variables of consumer empowerment and the last one for power values. Dichotomous variables are treated here as dummy variables. They are coded as ‘1’ when the answer is right and as ‘0’ when it is wrong. The variables age, nationality, gender, years of completed education, Internet usage frequency and occupation were not factor analyzed.

#### Multiple regression and Logistic regression

Hair et al. (2006, p. 152) defined multiple regression analysis as a “general statistical technique used to analyze the relationship between a single dependent variable and several independent variables”. The mathematical explanation of multiple regression is  $Y$  (metric) =  $f(x_1, x_2, \dots, x_n)$ . The independent variables, also called predictors, are weighted by the regression procedure to ensure maximal prediction of the dependent variable, also called criterion.

Logistic regression is formulated to predict or explain a binary categorical variable. This thesis includes two logistic regressions, one to predict the nationality, Portuguese or Spanish, and other to predict if the respondents belong to the Internet generation or not. Instead of logistic

regression, discriminant or order analysis could be performed, but logistic regression has the advantage of being less affected by violation of assumptions, in particular normality. Moreover, logistic regression does not require linear relationship between the independent variables and the dependent variables. For all of this reasons the researcher found interesting the use of logistic regression. The basic model that follows logistic regression is  $Y = f(x_1, x_2, \dots, x_n)$  where  $Y$  is the dependent binary variable and  $x_1, x_2, \dots, x_n$  are the independent variable that can be metric or non metric.

In logistic regression it will be studied several indicators of the overall fit of the model. The -2 log-likelihood test statistic evaluates the quality of the fit. For logistic regression, the smaller the value of -2 log-likelihood the better fit. Another 2 measures of the fit are the "pseudo-R square" Cox and Snell and Nagelkerke. Actually, these two measures are similar to R square used in multiple regression. Both measures represent in a different way the proportion of variation of the independent variables associated to the dependent variable, so the highest values indicate greater variation explained by the model. R square Cox and Snell is based on the proportion of variance that is not explained and is enhanced by adding significant variables to the model. Nagelkerke R square is an adapted version of R square Cox and Snell but easier to interpret and varying between 0 and 1. Finally the last indicative of statistical quality of the model is the Hosmer and Lemeshow test. The observed values and the expected values are used to calculate the test statistic. It indicates the extent to which the model provides better fit than a null model with no predictors, or, on a different interpretation, how well the model fits the data as a log-linear model. If Hosmer and Lemeshow test is not significant, then the model has adequate fit. By the same token, if the test is significant, the model does not adequately fit the data (Hair et al., 2006).

For both multiple and logistic regression it is usually recommended samples of more than 400 respondents and at least 10 observations per category (Hosmer and Lemeshow, 2000). In the case of this thesis it was considered that 324 respondents were enough to performance the regressions.

### **2.5.1 Interpreting the regression coefficients**

In multiple regression the assumption of linearity implies a linear relationship between dependent and independent variables. Mathematically the variation of the dependent variable is equal to the variation of the independent variable multiply by the multiple regression coefficient.

Logistic regression interpretation is different due to the lack of linearity between dependent and independent variable. The relationship between variables is logarithmic since the logarithmic function concentrates most of the points in the start and the end of the curve (respectively the values 0 and 1). A well defined logistic distribution raises two distinct zones, one in the beginning of the curve and another in the end. In a poor defined logistic distribution points are at the same height zone where appear the point of inflexion in the middle of the curve (Figure 10).

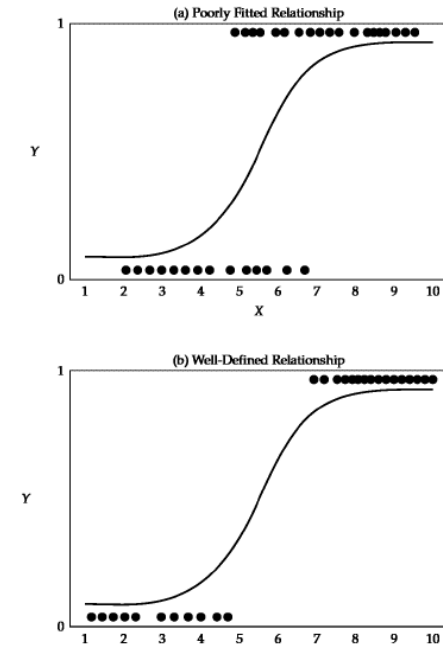


Figure 10. Logistic regression curve

In multiple regression if the symbol of the independent variable coefficient is positive it indicates that an increase in the independent variable will cause an increase in the dependent variable. However in logistic regression as the dependent variable is binary and it can only be 1 or 0, if the sign is positive the dependent variable will increase the likelihood of getting the value 1 while if the coefficient is negative the probability of being 0 is higher. The magnitude of the coefficient is interpreted by its exponential. The exponential of the estimated coefficients of the independent variables represents the ratio of the odds of the dependent variable per unit increase in the independent variable, which can be presented as a percentage using the following formula: Percentage change in odds =  $(\exp(B) - 1) \times 100$  (Hair et al., 2006).

### 3 Results and discussion

#### 3.1 Sample descriptive analysis

There were 324 questionnaires answered. All the questions were mandatory to complete the questionnaire so those respondents who did not finish the questionnaire do not appear on the collected data. About the genre there were 168 answered by males and 156 answered by females (52% and 48% respectively, Figure 11):

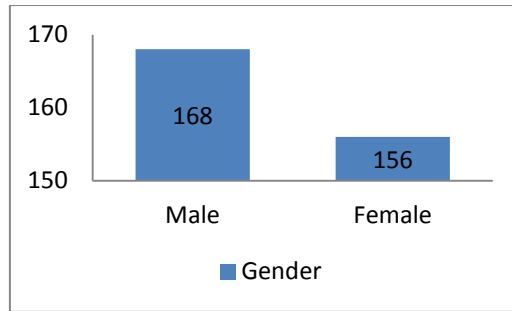


Figure 11. Gender

The age distribution reveals that the questionnaire was completed by 125 people who are 25 years old or over 25 years old and 199 people under 25 years old (Figure 12).

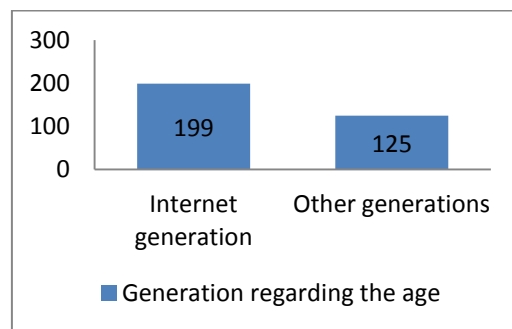


Figure 12. Generation

As the sub-samples of age have enough respondents, consumer empowerment will also be compared between the Internet generation and other generations. Regarding the nationality there are 40% Spanish (128 respondents), 52% Portuguese (170 respondents) and the rest are from other nationalities (26 respondents). Figure 13 and 14 crosses the nationality with the age of the respondents. Figure 13 show the distribution in terms of nationality for those who do not belong to Internet Generation while Figure 14 shows the same distribution but for those that belong to the Internet Generation.

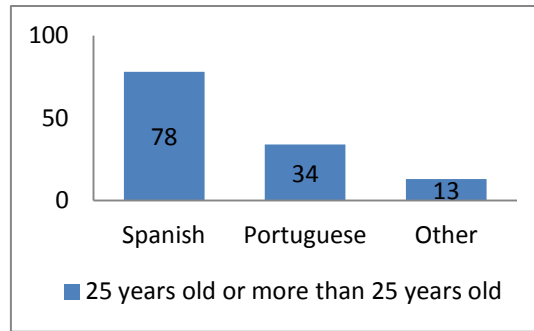


Figure 13. Nationality for people of 25 years old or over

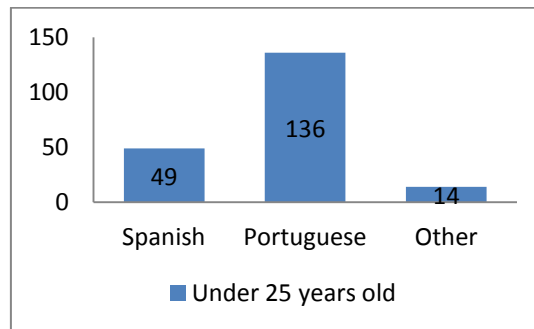


Figure 14. Nationality for people under 25 years old

For the occupation of the respondents (Figure 15), it seems clear that the majority of the Portuguese respondents are students (not only from Instituto Técnico de Lisboa) while the Spanish respondents sample has more variety. Probably it is because the researcher was helped to spread the questionnaire by his relatives who contacted older consumers.

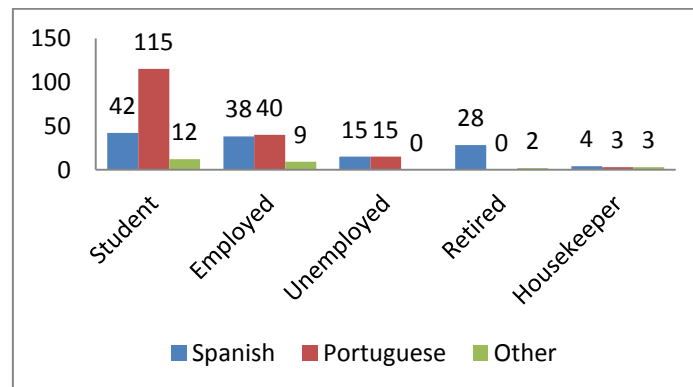


Figure 15. Occupation versus nationality

The years of completed education appears on Figure 16. There are 24 values that correspond to non numerical answers (some people answered what type of education they completed instead of how many years). The researcher translated those 24 values into years of completed education to avoid missing values.

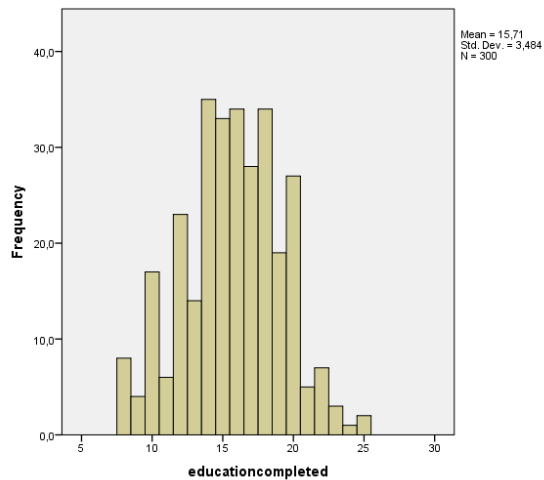


Figure 16. Education completed (in years)

Regarding the Internet usage frequency, almost all the respondents are daily users, with only a few defining themselves as weekly users. This may mean that the use of Internet is already spread across different generations.

## 3.2 Factor analysis

It was decided to performance factor analysis for each part of the questionnaire:

- E-empowerment
- Consumer empowerment
- Power values

### 3.2.1 Factor analysis e-empowerment

Before performing factor analysis it was decided to study the internal consistency by estimating the coefficient alpha. The reliability value (Cronbach's  $\alpha$ ) goes from 0 (no reliability) to 1 (perfect reliability). Reliability should be at least 0.70 (Hair et al., 2006). Other sources indicate that a value of less than 0.6 would typically indicate marginal to low (or unsatisfactory) internal consistency (Hair et al., 2006). For the 10 items related to E-empowerment, Cronbach's alpha was 0,817, as it can be seen in table 2.

Table 2. Reliability Statistics  
e-empowerment

Cronbach's Alpha	N of Items
,817	10

Once it is studied the internal consistency, the next step is performance the Bartlett's Test of Sphericity. It tries to measure if the correlation matrix has significant correlations among its

variables. Its value has to be smaller than 0,05 to indicate that there are sufficient correlations existing among variables and that it is correct to proceed with the factor analysis (Hair et al., 2006). Another method to ensure there are correlations among variables and the factor analysis is adequate is the Measure of Sampling Adequacy (MSA) which value can go from 0 to 1. Hair et al. (2006) considers that the MSA should be greater than 0,5 before proceeding with the factor analysis. As presented in Table 3, the Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin measure of sampling were both satisfactory for the e-empowerment items (questions 1 to 10 of the questionnaire).

Table 3. KMO and Bartlett's Test of Sphericity e-empowerment

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,856
Approx. Chi-Square		799,107
Bartlett's Test of Sphericity	df	45
	Sig.	,000

From the above presented results, the data is suitable to be factor analyzed. The Extraction Method of Principal Component Analysis and Varimax rotation produced a clear solution allowing uncorrelated factors. None of the variables contain communalities below 0,3 and the total variance explained was almost 50% founding 2 factors (Table 4).

Table 4. Rotated Component Matrix e-empowerment<sup>a</sup>

	Component	
	1	2
PERSONAL1		,550
PERSONAL2	,594	
INTERPERSONAL1		,805
INTERPERSONAL2	,441	,428
GROUP1		,583
CITIZENSHIP1	,506	
INTERPERSONAL3	,800	
INTERPERSONAL4	,712	
GROUP2	,772	
CITIZENSHIP2		,645

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.



The next step is to assess communalities. Hair et al. (2006) recommends communalities greater than 0,5 but as they point there is no specific rule. It was decided for this thesis that communalities below 0,3 are not acceptable while communalities between 0,5 and 0,3 are bad but not enough for removing the variable in the factor analysis. In our case all communalities were over 0,4.

As it can be appreciated in table 4, the variable "INTERPERSONAL2" loads in the two factors. In this case the researcher has to remove this variable and repeat the whole process with the remaining variables (Hair et al., 2006).

The new factor analysis with the 9 remaining variables produced the following results:

- Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO): 0,843
- Bartlett's Test of Sphericity sig. : 0,000
- Communalities over 0,3
- 2 factors that explain 51,496% of the total variance

All the variables now loaded in only one factor: Table 5 presents the structure for the e-empowerment scale.

Table 5. Rotated Component Matrix e-empowerment<sup>a</sup>

	Component	
	1	2
PERSONAL1		,550
PERSONAL2	,599	
INTERPERSONAL1		,808
GROUP1		,573
CITIZENSHIP1	,506	
INTERPERSONAL3	,807	
INTERPERSONAL4	,714	
GROUP2	,780	
CITIZENSHIP2		,674

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Instead of four factors describing the four levels for e-empowerment proposed by Amichai et al. (2008), the analysis revealed two factors, that, nevertheless had a logical composition: factor 1

describes an improver role, while factor 2 describes a facilitator role. Both these aspects contribute to a perceived empowerment derived from Internet usage.

Factor 1:

- PERSONAL2: “The Internet ***improves*** my social skills”
- CITIZENSHIP1: “I can help to ***improve*** the politics of my country through the Internet”
- INTERPERSONAL3 : “The Internet eliminates cultural and religious barriers”, so it ***improves*** integration between cultures
- INTERPERSONAL4: “The Internet reduces stereotypes because I do not see the person I write to”, so it ***improves*** the psychological knowing of a person due to the lack of physical appearance
- GROUP2: “I feel I belong to some kind of group on the Internet”, so it ***improves*** group membership and the feeling of social inclusion

Factor 2:

- PERSONAL1: “The Internet ***facilitates*** expressing one's thoughts and feelings”
- INTERPERSONAL1: “Thanks to the Internet I keep contact with some friends that otherwise I wouldn't be in touch”, so it ***facilitates*** maintaining friendship and relationships
- GROUP1: “It is possible to meet people similar to me on forums, blogs and social networks”, so it ***facilitates*** meeting peers
- CITIZENSHIP2: “I consider voting through the Internet is a useful tool”, so Internet is perceived as ***facilitating*** voting

Due to the logical meaning of the factors, it was decided to use the 2 dimensions found to measure e-empowerment. The resulting factor scores were used as predictors in multiple and logistic regressions. Factor 1 is named as *e\_empowerment\_improver* and Factor 2 as *e\_empowerment\_facilitator*.

### **3.2.2 Factor analysis consumer empowerment**

Consumer empowerment has 13 variables, 7 of them frequency scales of 7 points and 6 dichotomous variables. The researcher is aware that with categorical variables one cannot do traditional exploratory factor analysis, based on Pearson correlations. For those binary variables, one should do factor analysis based on tetrachoric correlations and that is done in Appendix 4. As the results for the factor analysis obtained with the tetrachoric correlations are similar to the ones obtained with Pearson correlations, for reasons of simplicity, the researcher decided to carry with the values based on the Pearson correlations.

When performing factor analysis, using Pearson correlations, there were 3 variables that dropped from the analysis (CONSUMERSKILLS, GUARANTEED, COOLINGOFF2) due to their low communalities (less than 0,2 in these cases).

The new factor analysis with the remaining 10 variables of consumer empowerment shows these values:

- Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO): 0,71
- Bartlett's Test of Sphericity sig. : 0,000
- Communalities over 0,4
- 3 factors (table 6) that explain 56,072% of the total variance

Table 6. Rotated Component Matrix consumer empowerment<sup>a</sup>

	Component		
	1	2	3
COMPARINGPRODUCTS1	,685		
COMPARINGPRODUCTS2	,649		
TENDENCYTOTALK2	,774		
READINGTERMSANDCONDITIONS		,733	
INTERESTININFORMATION1		,837	
INTERESTININFORMATION2		,860	
TENDENCYTOTALK1	,696		
UNFAIRPRACTICES1			,503
COOLINGOFF1			,730
UNFAIRPRACTICES2			,658

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

The sub-pillar 'Consumer skills' didn't factorized and the other 2 sub-pillars, 'Consumer engagement' and 'Awareness of legislation' factorized in different dimensions. Due to the result obtained, either the researcher follows the work of Nardo et al. (2011) and creates one variable as a consumer empowerment index, or the researcher considers the three subdimensions found for the consumer empowerment construct. The remainder of the data analysis follows this second option, but, nevertheless, Appendix 5 replicates all the analyses considering only one variable for consumer empowerment. This appendix illustrates the weights and scores for the development of such a measure and compares the results with the results obtained by Nardo et al. (2011).

From Table 6, consumer engagement, sub-pillar of 'consumer empowerment', splits in factor 1 and 2, while the sub-pillar 'awareness of legislation' corresponds to factor 3. Factor 3 was easily named *c\_awareness\_of\_legislation..* On the other hand, factor 1 gathers comparing products

and tendency to talk, so it was called *c\_engagement\_proactive\_behavior*, while factor 2 was called *c\_engagement\_knowledge* because it gathers interest on information and reading terms and conditions. All factors were saved as factor scores.

### 3.2.3 Factor analysis power values

As Hair et al. (2006) points there should be at least 5 variables if the study is being design to reveal a factor structure but as long as there are strong correlations between the four variables of power values (see Pearson correlation significant at the 0.01 level in Table 7) it was decided to perform factor analysis for these four items.

Table 7. Correlation between power values variables

	POWERRESOUR CES1	POWERRESOUR CES2	POWERRESOUR CES2	POWERDOMINA NCE2
POWERRESOUR CES1	1			
POWERRESOUR CES2	0,405	1		
POWERRESOUR CES2	0,437	0,266	1	
POWERDOMINAN CE2	0,333	0,343	0,546	1

The communalities were all over 0,4, Cronbach's Alpha was 0,717, significance Bartlett's Test of Sphericity was under 0,05 and Kaiser-Meyer-Olkin Measure of Sampling Adequacy was almost over 0,7, assuring that the factor analysis can be performed (Table 8).

Table 8. KMO and Bartlett's Test power values

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,676
Approx. Chi-Square		263,690
Bartlett's Test of Sphericity	df	6
	Sig.	,000

The results on Table 9 show that the four variables load high in one factor, explaining 54,287% of the variance.

Table 9. Component Matrix power values<sup>a</sup>

	Component
	1
POWERRESOURCES1	,737
POWERRESOURCES2	,657
POWERDOMINANCE1	,781
POWERDOMINANCE2	,766

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

Recalling the subdimensions of the power values, it was also decided to force SPSS to find two factors. The new factor analysis forcing two factors offers communalities over 0,6 and the total variance explained now is 74,244%. The others parameters are the same. The now rotated component matrix is as showed in Table 10:

Table 10. Rotated Component Matrix power values<sup>a</sup>

	Component	
	1	2
POWERRESOURCES1		,694
POWERRESOURCES2		,903
POWERDOMINANCE1	,872	
POWERDOMINANCE2	,826	

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 a. Rotation converged in 3 iterations.

This factor analysis confirmed the two expected factors, one describing power resources and the other explaining power dominance, and confirming this way the structure of Schwartz et al. (2012). The respective factor scores were called *power\_resources* and *power\_dominance*.

### 3.2.4 Validity and reliability of the constructs

Once factor analysis is performed the researcher should know if the sample represents the population. For that reason reliability and validity has an important role analyzing the empirical data.

Validity reflects how well a given measurement measures what it is supposed to measure (Litwin, 1995). Once reliability is checked the researcher can assess validity, meaning that reliability is a necessary condition for validity. A reliable measure is supposed to get the same results on subsequent trials even if the instruments to obtain them are different.

Reliability is commonly evaluated assessing internal consistency. The most accepted statistic to assess reliability is the Cronbach's (1951) coefficient alpha, and, as said, values below 0.6 typically indicate unsatisfactory internal consistency reliability (George and Mallery, 2006), while  $\alpha$  values over 0.7 indicate satisfactory internal consistency reliability (Nunnally and

Berstein,1994). Another consideration to take into account is the number of items in a scale. The larger the number of items in a scale, the more reliable that scale will be (Nunnally, 1978). Validity evaluation is composed of several types of validity that usually complement each other. The different facets usually referred in the literature are face validity, content validity, criterion-related validity and construct validity (Anastasi, 1990).

Face validity was confirmed by the pre-tests and the informal discussions that derived from the questionnaire. Content validity should involve a set of reviewers who have some knowledge of the subject and for that reason it was not assessed. Criterion-related validity concerns whether or not a measure under study is related to an external standard against which this measure can be evaluated (Kline, 1998). The higher the correlation is, the higher the degree of criterion-related validity. Construct validity has no particular coefficient to assess it so it is usually evaluated by combining methods such as factor analysis and internal consistency measures. Construct validity is often explained through two other forms of validity: convergent and discriminant (or divergent) validity. Convergent validity can be demonstrated when different measures for the same construct present similar results but time and budget constraints limited the possibility of evaluating this type of validity. Discriminant validity refers to the extent to which a certain construct is different from other constructs. One way to check discriminant validity is to investigate if the correlation coefficient between a scale and any other scale is lower than the scale's Cronbach's alpha coefficient (Gaski and Nevin, 1985).

In this thesis discriminant analysis was check for the factors found and saved as variables:

- C\_engagement\_proactive\_behavior
- C\_engagement\_knowledge
- C\_awareness\_of\_legislation
- E\_empowerment\_improver
- E\_empowerment\_facilitator
- Power\_resources
- Power\_dominance

Validating these 7 variables is essential because the researcher will use these variables in multiple and logistic regressions. Table 11 shows a symmetric matrix where the diagonal presents the Cronbach's alpha found in the three factor analyses and the remaining cells present the Pearson correlation coefficient between variables. As it can be observed all the Pearson correlations are smaller than the respective Cronbach's alpha of the scale, concluding therefore that all variables possess discriminant validity.

Table 11. Discriminant validity

	C_engagement_proactive_behavior	C_engagement_knowledge	C_awareness_of_legislation	E_empowerment_improver	E_empowerment_facilitator	Power_resources	Power_dominance
C_engagement_proactive_behavior	0,695						
C_engagement_knowledge	0	0,776					
C_awareness_of_legislation	0	0	0,335				
E_empowerment_improver	-0,351	0,169	-0,275	0,763			
E_empowerment_facilitator	0,355	-0,146	0,146	0	0,652		
Power_resources	-0,042	0,147	0,126	0,111	0,091	0,576	
Power_dominance	0,085	-0,063	-0,171	0,170	-0,096	0	0,706

### 3.2.5 Factor analysis regarding nationality sub-samples

One of the purposes of factor analysis consists in reducing the number of variables to have a more parsimonious but equally valid model. As long as we want to confront the Spanish and the Portuguese sample (126 and 170 respondents respectively), it is important to use the same variables, factors or components to compare. For that reason, the sample was split into 2 sub-samples and it was carried a factor analysis for the Spanish sub-sample and another for the Portuguese sub-sample. Due to space limits, all the tables appear on Appendix 6.

Both sub-samples present the same structure:

- 2 factors regarding the 10 variables of e-empowerment.
- 3 factors regarding the 13 variables of consumer empowerment
- 2 factors regarding the 4 power values variables

Provided the factors are the same, multiple regression can be performed for the whole sample and for the sub-samples using the same factors as predictors.

## 3.3 Multiple regression

Following the factor analysis, a multiple regression was carried to predict the 3 facets of consumer empowerment. As there can be only one dependent variable for each multiple regression, it were performed 3 multiple regressions. The predictors or independent variables included the two factors describing e-empowerment, the two factors representing power values and the variables related to age, nationality, years of completed education and gender. The models presented are the final models with the statistical significant predictors.

### 3.3.1 Multiple regression c\_engagement\_proactive\_behavior

The first multiple regression will try to predict c\_engagement\_proactive\_behavior. Before looking at the statistical measures the residuals plot has to be checked to assess if the basic

assumptions on multiple regression are fulfilled. Residual plots can reveal unwanted residual patterns that indicate biased results more effectively than numbers. If the residual plots pass muster, the researcher can trust on the numerical results. Figure 17 shows there is no specific pattern or rule between the predicted and the observed residuals so we can proceed with the prediction.

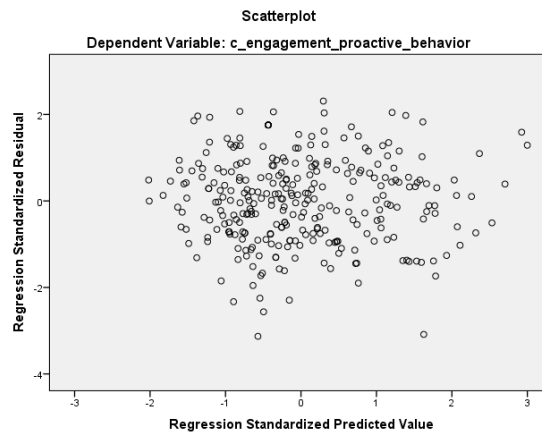


Figure 17. Scatterplot for residuals c\_engagement\_proactive\_behavior

The model obtained (Table 12) has an adjusted R square of 0,304 which means that the independent variables introduced in the model are able to predict 30,4% of the variance of the dependent variable. Model 4 indicates there were introduced 4 variables in the model. The final model includes e\_empowerment\_facilitator, e\_empowerment\_improver, power\_dominance and age.

Table 12. Adjusted R square c\_engagement\_proactive\_behavior

Model	R	Adjusted R Square
4	,560	,304

The coefficients appear on Table 13. As it can be appreciated the variables of e-empowerment have opposite sign: E\_empowerment\_facilitator enhances the dependent variable while an increment of e\_empowerment\_improver decreases the dependent variable. Power\_dominance enhances c\_engagement\_proactive\_behavior while with the variable age occurs that the Internet Generation is more prone than other generations to compare products and to talk about its consumption experiences.



Table 13. Standardized coefficients c\_engagement\_proactive\_behavior

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,020
e_empowerment_facilitator	,357	,000
e_empowerment_improver	-,354	,000
power_dominance	,206	,000
age	,144	,003

In order to validate the multiple regression analysis we have to check the assumption that we are working with independent variables (Hair et al. 2006). This assumption is checked by assessing tolerance and the variance inflation factor (VIF). The cut-off for tolerance is 0,2 and VIF, that is the inverse of the tolerance, should be smaller than 5. All the assumptions were met (Table 14), so we can consider predictors to be independent.

Table 14. Tolerance and VIF c\_engagement\_proactive\_behavior

Model	Tolerance	VIF
	(Constant)	
e_empowerment_facilitator	,977	1,023
e_empowerment_improver	,931	1,074
power_dominance	,944	1,060
age	,917	1,091

### 3.3.2 Multiple regression c\_engagement\_knowledge

Predicting c\_engagement\_knowledge in function of the same variables than the previous multiple regression, in this section, and due to space limits, only the main results are provided.

In this case the model explains 5,5% of the total variance of the dependent variable. As it can be seen in Table 15, the statistical significant predictors are e\_empowerment\_improver (B= 0,178), e\_empowerment\_facilitator (B= -0,133) and gender (B=-0,124). The negative coefficient of gender means that women as a consumer have more interest on information than men. Tolerance between predictors was all less than 1 so there is no multicollinearity (relationship between variables that are supposed to be independent).

Table 15. Standardized coefficients c\_engagement\_knowledge

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,051
e_empowerment_improver	,178	,002
e_empowerment_facilitator	-,133	,019
gender	-,124	,029

### 3.3.3 Multiple regression c\_awareness\_of\_legislation

The model presented in Table 16 explains 24,2% of the total variance of the dependent variable c\_awareness\_of\_legislation. It were included in the model nationality with a coefficient of 0,305, e\_empowerment\_improver (B=-0,235), power\_resources (B=0,145) and gender with a coefficient of -0,119. The positive coefficient of variable nationality means that Spanish are more aware of the legislation than the Portuguese consumers of the sample. The negative coefficient of age means that the Internet generation is less aware of consumer legislation, which is a result somehow expected due to the fact that younger consumers have had less consumption experiences and possess less knowledge of their rights as consumers.

Table 16. Standardized coefficients c\_awareness\_of\_legislation

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,273
nationality	,305	,000
e_empowerment_improver	-,235	,000
power_resources	,145	,005
age	-,119	,036

### 3.4 Multiple regression for Portuguese sub-sample

It was decided to perform other two multiple regressions for the Portuguese sub-sample and for the Spanish sub-sample. As it was explained, in factor analysis the same variables entered the regression as independent variables and so can be used in both sub-samples. The idea is to compare both multiple regression models in order to find differences between Portuguese and Spanish regarding consumer empowerment.

The first multiple regression was done for the Portuguese sub-sample, 170 respondents, and has as dependent variable: C\_engagement\_proactive\_behavior.

The independent significant variables:

- e\_empowerment\_facilitator
- e\_empowerment\_improver
- power\_resources
- power\_dominance
- age
- gender
- educationcompleted

The model explains 20,5% of the total variance of the dependent variable. It were included in the model, by order of importance, power\_dominance (B=0,277), e\_empowerment\_facilitator (B=0,276), e\_empowerment\_improver (B=-0,239) and educationcompleted (B=0,158). The 2 variables of e-empowerment have an opposite sign: e\_empowerment\_facilitator enhances C\_engagement\_proactive\_behavior, while e\_empowerment\_improver decreases it. It also appears that the more years of completed education the more proactive behavior. Regarding power\_dominance those who value having control over peers are also those who have a more proactive behavior as a consumer in society (Table 17).

Table 17. Standardized coefficients c\_engagement\_proactive\_behavior Portuguese sub-sample

Model	Standardized	Sig.
	Coefficients	
	Beta (B)	
(Constant)		,005
power_dominance	,277	,000
e_empowerment_facilitator	,276	,000
e_empowerment_improver	-,239	,001
educationcompleted	,158	,026

The next multiple regression for the Portuguese sub-sample has as dependent variable C\_engagement\_knowledge and the same independent variables as the previous multiple regression.

The model explains 11,16% of the total variance of the dependent variable. The significant predictors of the final model included, by order of importance in Table 18, are power\_resources (B=0,293), educationcompleted (B=0,208) and gender (B=-0,160). It seems again that the more years of completed education the more consumer knowledge. The negative coefficient of

gender means that women are more aware than men about consumer legislation. Regarding power\_resources those who value material goods are also those who tend to read terms and conditions and read or listen and search to consumer information.

Table 18. Standardized coefficients c\_engagement\_knowledge Portuguese sub-sample

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,041
power_resources	,293	,000
educationcompleted	,208	,006
genre	-,160	,032

The next multiple regression for the Portuguese sub-sample has as dependent variable C\_awareness\_of\_legislation. The model explains 5,9% of the total variance of the dependent variable. As depicted in Table 19, the model includes, by order of importance, e\_empowerment\_improver (B=-0,251) and power\_resources (B=0,153). Again those who value material goods are also those who tend to read terms and conditions and read or listen and search to consumer information. On the other hand the more e-empowered viewed as an improver the less aware of consumer legislation.

Table 19. Standardized coefficients c\_awareness\_of\_legislation Portuguese sub-sample

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,000
e_empowerment_improver	-,251	,001
power_resources	,153	,046

### 3.5 Multiple regression for Spanish sub-sample

The same regression model was also tested for the Spanish sub-sample. The first regression examined attempts to explain the dependent variable: C\_engagement\_proactive\_behavior with the independent variables:

- e\_empowerment\_facilitator
- e\_empowerment\_improver
- power\_resources
- power\_dominance
- age

- gender
- educationcompleted

The model explains 26,1% of the total variance of the dependent variable. Table 20 illustrates, by order of importance, the model predictors: e\_empowerment\_facilitator (B=0,380) and e\_empowerment\_improver (B=-0,342). It seems again that the 2 variables of e-empowerment go in the opposite direction in terms of influence: e\_empowerment\_facilitator enhances c\_engagement\_proactive\_behavior, while e\_empowerment\_improver decreases consumer proactive behavior. The sign of this last predictor is the same as for the Portuguese sub-sample. The facilities that Internet provides increases the tendency to talk and compare products while Internet, seen as an improvement in our society, makes the consumer less proactive behavior. While the consumer wins by having a new tool that facilitates compare or talk about products the opposite effect appears when the consumer becomes complacent and accept the first product he or she find without comparing or asking about them.

Table 20. Standardized coefficients c\_engagement\_proactive\_behavior Spanish sub-sample

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,076
e_empowerment_facilitator	,380	,000
e_empowerment_improver	-,342	,000

The next multiple regression for the Spanish sub-sample has as dependent variable C\_awareness\_of\_legislation and the same independent variables as previous regression.

The model explains 17,5% of the total variance of the dependent variable. As significant predictors of the Consumer\_awareness\_of\_legislation model, by order of importance, e\_empowerment\_improver (B=0,306), age (B=-0,216), educationcompleted (B=-0,212) and e\_empowerment\_facilitator (B=-0,202) (Table 21). The 2 variables of e-empowerment again go in the opposite direction: while e\_empowerment\_improver enhances C\_engagement\_knowledge, e\_empowerment\_facilitator decreases it. The age coefficient, -0,216, indicates that the Spanish Internet Generation usually tends to have less interest on consumer information than other generations. It was found also a negative relation between years of completed education and the engagement knowledge, the more years of education the less consumer engagement knowledge, a different relationship than for the Portuguese sub-sample where this influence was found to be positive (Table 21). Could this mean that people more educated feel that they already know the rights, conditions and information available for consumers, becoming consequently less interested in it?

Table 21. Standardized coefficients c\_engagement\_knowledge Spanish sub-sample

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,000
e_empowerment_improver	,306	,000
age	-,216	,010
educationcompleted	-,212	,011
e_empowerment_facilitator	-,202	,014

The following multiple regression for the Spanish sub-sample has as dependent variable C\_awareness\_of\_legislation.

The model explains 17,1% of the total variance of the dependent variable. It were included in the model, by order of importance, e\_empowerment\_improver (B=-0,226), power\_dominance (B=-0,220) power\_resources (B=0,211) and educationcompleted (B=-0,176). The 2 dimensions of power values influence with opposite signs. Those who appreciate dominance are more aware of the consumer legislation, while those that perceive and value power from resources are less aware of consumer legislation. Again the more years of education the less aware of consumer legislation (see Table 22).

Table 22. Standardized coefficients c\_awareness\_of\_legislation Spanish sub-sample

Model	Standardized Coefficients	Sig.
	Beta (B)	
(Constant)		,000
e_empowerment_improver	-,226	,008
power_dominance	-,220	,010
power_resources	,211	,011
educationcompleted	-,176	,037

### 3.6 Summarization of the regression analyses

The next tables will sum up which variables entered in the multiple regression and which not. Figure 18 shows the color classification coefficients for Table 23,24,25,26. Figure 18 explains that if the cell is green the coefficient is positive, if the cell is blue the coefficient is negative and the red cells correspond to the variable nationality which was not entered in the sub-sample multiple regressions. Finally, when the cell is white the independent variable is not significant, and so, not included in the model. For table 23,24,25,26 in the left column there are the dependent variables for the whole sample and for the sub-samples and in the other columns it appears the independent variables used as predictors. In table 23 it appears as predictors the 2

facets of e-empowerment, in table 24 the predictors are the 2 power values, in Table 25 the predictors are age and nationality and in Table 26 gender and years of completed education.

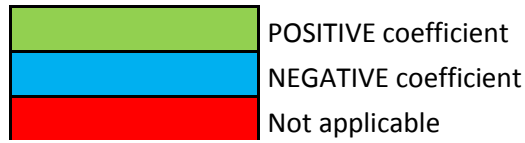


Figure 18. Color classification coefficients

Table 23. Summarization multiple regression 1

Depend var.\ Indep. Var.	e_empowerment_improver	e_empowerment_facilitator
<b>WHOLE SAMPLE</b>		
c_engagement_proactive_behavior	NEGATIVE coefficient	POSITIVE coefficient
c_engagement_knowledge	POSITIVE coefficient	NEGATIVE coefficient
c_awareness_of_legislation	NEGATIVE coefficient	
<b>PORTUGUESE SAMPLE</b>		
c_engagement_proactive_behavior	NEGATIVE coefficient	POSITIVE coefficient
c_engagement_knowledge		
c_awareness_of_legislation	NEGATIVE coefficient	
<b>SPANISH SAMPLE</b>		
c_engagement_proactive_behavior	NEGATIVE coefficient	POSITIVE coefficient
c_engagement_knowledge	POSITIVE coefficient	NEGATIVE coefficient
c_awareness_of_legislation	NEGATIVE coefficient	

Table 24. Summarization multiple regression 2

	power_resources	power_dominance
<b>WHOLE SAMPLE</b>		
c_engagement_proactive_behavior		POSITIVE coefficient
c_engagement_knowledge		
c_awareness_of_legislation	POSITIVE coefficient	
<b>PORTUGUESE SAMPLE</b>		
c_engagement_proactive_behavior		POSITIVE coefficient
c_engagement_knowledge	POSITIVE coefficient	
c_awareness_of_legislation	POSITIVE coefficient	
<b>SPANISH SAMPLE</b>		
c_engagement_proactive_behavior		
c_engagement_knowledge		
c_awareness_of_legislation	POSITIVE coefficient	NEGATIVE coefficient

Table 25. Summarization multiple regression 3

	age	nationality
<b>WHOLE SAMPLE</b>		
c_engagement_proactive_behavior		
c_engagement_knowledge		
c_awareness_of_legislation		
<b>PORTUGUESE SAMPLE</b>		
c_engagement_proactive_behavior		
c_engagement_knowledge		
c_awareness_of_legislation		
<b>SPANISH SAMPLE</b>		
c_engagement_proactive_behavior		
c_engagement_knowledge		
c_awareness_of_legislation		

Table 26. Summarization multiple regression 4

	educationcompleted	gender
<b>WHOLE SAMPLE</b>		
c_engagement_proactive_behavior		
c_engagement_knowledge		
c_awareness_of_legislation		
<b>PORTUGUESE SAMPLE</b>		
c_engagement_proactive_behavior		
c_engagement_knowledge		
c_awareness_of_legislation		
<b>SPANISH SAMPLE</b>		
c_engagement_proactive_behavior		
c_engagement_knowledge		
c_awareness_of_legislation		

The results obtained from the 9 multiple regressions can be summarized as:

- In most of the regressions, the e-empowerment viewed as improver was a significant predictor. In most cases it had a negative coefficient, so, in general terms, the more the Internet is perceived with an improver value, the less the consumer empowerment.
- The facilitator value of e-empowerment was less significant in the multiple regressions that were carried out. It seems that Internet usage is perceived as providing empowerment more with an improvement value than with a facilitator value.
- Power resources coefficients were always positive in the multiple regressions where they appeared as significant predictors, meaning that those that appreciate control over material resources are more consumer empowered.



- The influence of age was always positive meaning that the Internet generation is more consumer empowered than other generations.
- Nationality was only significant in the multiple regressions that predict the knowledge of consumers about legislation. In particular, Spanish respondents were more aware of legislation than Portuguese respondents.
- The variable representing the years of completed education showed opposite results for Spanish and Portuguese respondents. For Portuguese people the more years of completed education, the more empowered they are as consumers. For Spanish respondents, the more years the less empowerment.
- Gender, although it was not significant in most of cases, when it is it has a negative coefficient, meaning that women are more consumer empowered than men.

## 3.7 Logistic regression

### 3.7.1 Logistic regression for nationality

The logistic regression will try to predict nationality as a function of the 3 factors that compose consumer empowerment, the 2 factors that form e-empowerment and the last 2 factors that define power values. Table 27 shows 26 missing cases that correspond to those respondents that were not Portuguese or Spanish. Nationality was coded as 1 for Spanish and 0 for Portuguese.

Table 27. Case Processing Summary logistic regression nationality

Unweighted Cases		N	Percent
	Included in Analysis	298	92,0
Selected Cases	Missing Cases	26	8,0
	Total	324	100,0
Unselected Cases		0	,0
Total		324	100,0

SPSS provides a Block 0 (Table 28) with non variables as predictors. In our case SPSS is telling us that the researcher can predict 57% of the cases without performing any logistic regression model. This value corresponds to the number of Portuguese people in total sample (170 of 298). It is important to notice that this is the value the researcher should improve.

Table 28. Block 0, Classification Table, logistic regression nationality<sup>a,b</sup>

	Observed	Predicted		
		nationality_binary		Percentage Correct
		Portuguese	Spanish	
Step 0	Portuguese	170	0	100,0
	Spanish	128	0	,0
	Overall Percentage			57,0

a. Constant is included in the model.

a. The cut value is ,500

Table 29 shows which variables are significant and can be introduced in the equation model. The significant variable that has the highest score is the one to first enter in the model. As it can be seen there are five variables whose introduction in the model will produce a better prediction. The one with highest score is c\_awareness\_of\_legislation. This variable will enter first in the model using the method Forward: Wald. The significant variables are introduced beginning with the highest scores until the model does not improve any further.

Table 29. Variables not in the Equation logistic regression nationality

		Score	df	Sig.
Step 0	Variables			
	c_engagement_proactive_behavior	32,255	1	,000
	c_engagement_knowledge	,854	1	,355
	c_awareness_of_legislation	51,047	1	,000
	power_resources	,090	1	,765
	power_dominance	14,547	1	,000
	e_empowerment_improver	19,780	1	,000
	e_empowerment_facilitator	26,186	1	,000
	Overall Statistics	93,153	7	,000

Table 30 presents several indicators of the overall fit of the model. In this table the addition of independent variables improves the predictive ability of the model. - 2 Log likelihood decreases in each step while Nagelkerke R square value indicates that the introduction of independent variables in the model explains 40,2% of the variance in the dependent variable.

Table 30. Model Summary logistic regression nationality

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	351,642 <sup>a</sup>	,170	,228
2	316,335 <sup>a</sup>	,263	,353
3	305,051 <sup>b</sup>	,290	,389
4	301,209 <sup>b</sup>	,299	,402

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

b. Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

Table 31 shows Hosmer and Lemeshow values. We can conclude that the values estimated by the model are close to observed values and the model fits the data when this test is not significant, confirming that the null hypothesis of model adjustment to the data is not rejected (Hair et al., 2006) and our case it is not significant in the four steps.

Table 31. Hosmer and Lemeshow Test logistic regression nationality

Step	Chi-square	df	Sig.
1	9,863	8	,275
2	7,705	8	,463
3	9,391	8	,310
4	9,668	8	,289

Table 32 summarizes the classification of the respondents observed and predicted by the model. This table allows us see which cases are well predicted by the model (those that are at the same time observed and predicted) and those which are wrongly predicted. In this case, the model is able to correctly predict almost 82% of the Portuguese subsample and a little over 67% of the Spanish subsample. Overall, the model can correctly predict 75,5% of the cases relating to nationality. Departing from an initial 57% of correct predictions, the introduction of predictors significantly improved the quality of the model.

Table 32. Classification Table logistic regression nationality <sup>a</sup>

	Observed	Predicted		
		nationality		Percentage
		Portuguese	Spanish	Correct
Step 4	Portuguese	139	31	81,8
	Spanish	42	86	67,2
	Overall Percentage			75,5

a. The cut value is ,500

The estimation of the model parameters is described in Table 33. The variables introduced in the model were `c_engagement_proactive_behavior` ( $B=0,777$ ), `c_awareness_of_legislation` ( $B=0,965$ ) and `power_dominance` ( $B=-0,488$ ). `E_empowerment_facilitator` was marginally significant at 5%. These variables can be used to explain, identify and interpret the relationship that affects the predicted probabilities.

The sign of the coefficient (B) reveals there is a positive relationship between the 2 factors of consumer empowerment and the “predicted probability”, occurring the opposite for the power values. The “predicted probability” is always the probability of obtaining the value 1 for the dependent binary variable, in our case Spanish is coded as 1, compared to having a code 0 (Portuguese). Once the sign or direction is explained, the most direct method of assessing the magnitude of the change in probability due to each predictor is to examine the exponentiated coefficients (last column).

The column Exp (B) is the exponential of the estimated coefficients of the independent variables in the model (column B). It represents the ratio of the odds of the dependent variable per unit increase in the independent variable, which can be presented as a percentage using the following formula: Percentage change in odds =  $(\exp(B) - 1) \times 100$  (Hair et al., 2006). In the three variables that entered in the model the Percentage change in odds is:

- `c_engagement_proactive_behavior`: 117,1%
- `c_awareness_of_legislation`: 162%
- `power_dominance`: -38,6%

Thus, beginning with the most significant variable, it appears that the odds or chances of being Spanish (compared to being Portuguese) increases 117,1% when the variable `c_engagement_proactive_behavior` increases 1 unit and the other variables are not changed. Another way of looking to this result could be that when one has consumers that compare products and tend to talk about the positive and negative consumption experiences they had, it will be more probable that we are looking at Spanish consumers. Or that, an increase in this type of behavior rises the chances by 117% of being a Spanish consumer and not a Portuguese consumer.

Similarly, when consumer awareness of legislation increases, the chances of being Spanish rise by 162%. For `power_dominance`, it means that an increase in the individual valuation of being in charge, telling others what to do, will decrease the chances of being Spanish by almost 40%. One might conclude that Portuguese sampled consumers value more this facet of power.

Interpreting `e_empowerment_facilitator`, the results show that an increase on the perceived facilitator role of the Internet, in terms of power, will increase the chances of being Spanish by 36%. It seems that Spanish consumers are more aware of the facilitator role than Portuguese consumers.

Table 33. Variables in the equation logistic regression nationality

		B	Sig.	Exp(B)
	Constant	-,390	,006	,677
	c_engagement_proactive_behavior	,777	,000	2,175
	c_awareness_of_legislation	,965	,000	2,626
Step 4	power_dominance	-,488	,002	,614
	e_empowerment_facilitator	,308	,051	1,361
	Constant	-,377	,009	,686

### 3.7.2 Logistic regression for age

This logistic regression predicts if the respondent belongs to the Internet Generation or not. Recall that respondents belonging to the Internet generation were coded as 1 (“under 25 years old”), and coded as 0 if belonging to other generations (“25 years old or more than 25 years old”). The regression will use the same predictors than the logistic regression for nationality.

The model without any independent variables entered has an overall correct predicted percentage of 61,4%, meaning that it predicts that 61,4% of the respondents belong to the Internet Generation.

The statistical test to assess the overall fit model (Table 34) reveals that the value of Nagelkerke R square is increasing in every step until it reaches a value of 0,221 which indicates that by introducing independent variables in the model, it can be explained 22,1% of the variance of the dependent variable.

Table 34. Model Summary logistic regression for age

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	401,060 <sup>a</sup>	,091	,124
2	382,449 <sup>a</sup>	,142	,193
3	374,490 <sup>a</sup>	,163	,221

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

Hosmer and Lemeshow Test is not significant in the 3 steps so the model found is useful to predict the dependent variable (see Table 35).

Table 35. Hosmer and Lemeshow Test  
logistic regression for age

Step	Chi-square	df	Sig.
1	6,761	8	,563
2	12,086	8	,147
3	7,112	8	,525

Table 36 shows the model is able to predict if the respondent belongs to the Internet generation in the 84,9 of cases decreasing this percentage to 48% when it does not belong to the Internet Generation. In general the model is able to predict 70,7% of the cases. The improvement of the prediction is 9,3% regarding the block 0, without predictors, where the percentage was 61,4%.

Table 36. Classification table logistic regression for age<sup>a</sup>

	Observed	Predicted		
		age		Percentage Correct
		Other generation	Internet generation	
Step 3	Other generation	60	65	48,0
	Internet generation	30	169	84,9
	Overall Percentage			70,7

a. The cut value is ,500

From Table 37, one can see that the variables introduced in the model were: c\_engagement\_proactive\_behavior, c\_awareness\_of\_legislation, and power\_dominance.

The Percentage change in odds is:

- c\_engagement\_proactive\_behavior: -43,6%
- c\_awareness\_of\_legislation: -48,3%
- power\_dominance: 42,3%

Thus, beginning with the most significant variable, it appears that the odds or chances of belonging to the Internet Generation (compared to other generations) decreases 43,6% when the variable c\_engagement\_proactive\_behavior increases 1 unit and the other variables are not changed. Another way of looking to this result could be that when one has consumers that compare products and tend to talk about the positive and negative consumption experiences they had, it will be more probable that we are looking at non Internet Generation consumers.

Similarly, when consumer awareness of legislation increases, the chances of belonging to the Internet Generation decreases by 48,3%. For power\_dominance, it means that an increase in the individual valuation of being in charge, telling others what to do, will increase the chances of belonging to the Internet Generation by 42,3%.

Table 37. Coefficients logistic regression for age

		B	Sig.	Exp(B)
	c_engagement_proactive_behavior	-,573	,000	,564
Step 3	c_awareness_of_legislation	-,660	,000	,517
	power_dominance	,353	,006	1,423
	Constant	,549	,000	1,731

## 4 Conclusions

The main aim of this thesis is to discern whether the advent or appearance of new technologies influences, somehow, the power of people as consumers. The Internet Generation is called like that because it is a generation that has grown during the creation and evolution of new technologies whose main pillar is the Internet. It was then considered interesting to study how powerful this generation is, as consumers.

While some doubts arise about whether there is a real consumer empowerment across generations, another question arises: how does empowerment fluctuates between regions? For this reason it also studied what are the differences between consumer empowerment in the Iberian Peninsula, between Spain and Portugal, although the researcher knows the samples are not representative of the respective populations, because the Spanish respondents are all from Madrid and the Portuguese respondents are only from Lisbon and in particular from Instituto Técnico Superior.

Because everything revolves around the Internet, the research also focuses on understanding the roles the Internet can represent and the influences these roles have on consumer empowerment. And because Schwartz's theory of values includes power as one of the main values reflecting the individual need for dominance over people and resources, it was also studied the impact this need for control has on the empowerment as a consumer.

In general terms the answer to the question "is there a real Consumer empowerment?" is yes. Nowadays people have enough knowledge and skills that allow, without doubt, some degree of power as consumers. Most consumers are able to calculate a percentage, which becomes essential when products are bought at a discount or when interests have to be paid on loans. The findings revealed that looking at simple numerical skills, there are no differences between generations. This can probably be explained because the Internet generation is the most educated generation (Lowe, Levitt and Wilson, 2008; Wolburg and Pokrywczynski, 2001), while other older generations may lack such education, but have in contrast more experience in life as consumers.

In general terms, numerical skills are unrelated to the Internet, however other facets of consumer behavior can be linked to it. Nowadays with innumerable providers and consumers, products' selection is decided by either comparing products or by listening to the comments of other consumers who have already tried the product or the provider (Wathieu et al., 2002). This thesis has found that the facility of contacting other people on the Internet has a positive impact when comparing and expressing opinions about products. It was also found that those who value power derived from dominating others tend to express their opinions about products. Combining these two findings, the explanation can be that those who tend to speak about a product are, at the same time, those that tend to impose their opinions or change the mind of others about consumption. If a consumer writes on the Internet about a product he or she is



trying to convince the other about the virtues or defects of it. Although one consumer that is comparing a product may or may not trust other consumers' comments, the fact of having access to these reviews is a step forward for the establishment of Consumer empowerment. Those that give better or more credible arguments are tipping the balance towards a positive or negative feedback about the product arriving to some kind of collective opinion that confirms the consumer power level explained by Denegri et al. (2006) where the consumer is thought as a whole rather than a series of individuals.

Due to these conclusions, Internet can be seen as a platform that offers a new communication channel that at the same time facilitates dominance behaviors and consumer empowerment.

Regarding nationality, the differences, although not large, reveal that the Spaniards are more likely to share the experiences they have had as consumers. Due to the results obtained for both nationalities it can be concluded that the theory of Wright (2006) that claims that, thanks to Internet, consumers are becoming less passive in accepting what is offered by suppliers, is supported.

Besides discussing and comparing products, consumers are also seeking information about their rights. The difference is that for this they do not take into account the views of other consumers. Probably because it is something more objective and convenient, the consumer uses the Internet as the place to search and find reliable sources on standards and consumer rights. The act of seeking rights can be seen as empowerment, and the fact that the consumer does it individually, without taking into account the opinions of peers, constitutes, following the theory of Zimmerman (2000), a process of individual empowerment due to the management of individual resources (Internet) to fulfill a purpose (find consumer rights). Since there were found no significant differences between generations and nationalities it is concluded that the search for rights is something that is above nationality or generations and only depends on the individual self and its interest or motivation as a consumer. But if we think in terms of gender, it was found that women seek more information about their rights as consumers than men. Maybe it is the result of the immense effort women have done for over 200 years to leave the subordination of the cultural buildings, including the laws of the nineteenth and twentieth century, that had left women in an inferior position to men (Nash, 2004).

But then, one thing is information search for rights and another thing is the knowledge that one has on consumer rights and the current legislation. The knowledge of the legislation was the facet of consumer empowerment that obtained lower score. This may be due to the continuous changes taking place in the European Union legislation, normative or policy that usually add complexity to the existing ones, causing the consumer not to understand the main points of the legislation, even though he or she searched for them.

It was also found that the knowledge of legislation is different and varies from one generation to others. Despite being born with the Internet, the Internet Generation does not know the law

better than older generations. The Internet use has expanded across generations so that older generations control the tools to find the legislation, have the experience of being consumers for years, and have a better understanding of legislation. The differences between nationalities are also evident in this aspect: Spaniards were found to know better European legislation, maybe because of the multitude of consumer associations that proliferate in Spain. According to Moro (1992), since the 90s the Spanish consumer knows its rights through the increased associations and especially thanks to the current Spanish legislation that allows a quick and efficient process in case of consumer complaints.

The tendency to value material possessions also influences the knowledge of the law and does so for both Spanish and Portuguese societies. The more we value a resource the more we know the law around it. Certainly a greater knowledge of the legislation creates a greater sense of control that, as explained by Langer (1983), provides satisfaction.

The conclusion that it can be obtained from appendix 5 is just that consumer empowerment is a big concept that cannot be thought as one variable to measure and that it has to be analyzed by big components. In fact, as it was pointed in page 4 of this thesis, the three levels of empowerment (personal, organizational and community) proposed by Zimmerman and Warschausky (1998) can be used to explain consumer empowerment. Searching for information rights and reading terms and conditions give the consumer some sense of control, as it was demonstrated, and give the necessary information or skills to proceed in the decision making process that is part of the individual empowerment process. On the other hand, comparing products or talking about them corresponds to the organizational level of empowerment because in these case the consumer interacts with others and tries to gain political influence by making his/her opinion of a product prevail over other opinions (power dominance). Finally, the community level, where the consumer as a citizen with rights can be thought as the frame defining awareness of legislation.

According to the objective of identifying the role played by the Internet on the consumer empowerment process, the research concluded that some facets of the Internet are more likely to magnify this empowerment while others impoverish it. The features that enhance consumer empowerment are those that facilitate life in general and make things easier, while other features of the Internet make the consumer complacent and ready to take the first option that is offered. As Pires et al. (2006) point Internet is the tool, but the use we give to Internet is what really matters.

Gathering all the conclusions the researcher wants to emphasize it is demonstrated that nowadays the consumer has access to new flows of information through the Internet impacting, positively, on the influence or power during the consumption process. Internet creates or gives opportunities that let consumers control over their own destinies and influence decisions that affect their lives according to the empowerment process explained by Zimmerman (1995, 2000). Internet Generation has better numerical skills than other generations, however legislation's knowledge and engagement should be improved. Finally, regarding nationality, the differences

in Internet usage are minimal, however, differences in legislation's knowledge makes Spanish better positioned.

## 5 Limitations and future research

Some limitations were found, that can be considered as paths for future research.

Even though the Portuguese sub-sample is larger than the Spanish one, the researcher had some difficulties to find the list of the e-mails of IST. Finally thanks to the help of the basketball team of IST and some flatmates it was possible to spread the questionnaire mainly among IST. With the Spanish sample it does not occurs the same as long as it was not only answered by the students of Politécnica de Madrid. Therefore, in terms of representativeness of the sample, the Spanish sample was more representative of the Spanish population than the Portuguese one. Also, it would have been possible to increase the sample size if the questionnaire was available longer than it was (1 month). A sample size of at least 600 respondents would have allowed dividing the sample into two more robust sub-samples.

The development of a unique indicator or scale to measure consumer empowerment (in line with what was presented in Appendix 5) could improve the quality of the models tested. But within the time limits faced by the researcher, this was not possible.

It is suggested therefore that in future investigations on this subject all these limitations should be taken into account in order to improve the results obtained. As future research it would be interesting to include other variables besides e-empowerment and social values. Also, with longitudinal studies, it should be interesting to wait a couple of years and compare the Internet generation against coming generations.

## 6 Appendices

### Appendix 1 Main concepts

**Information and Communication Technology, ICT:** it is defined as the set of resources, procedures and techniques used in the processing, storage and transmission of information. IT provides among other things Internet access either from our home, with a computer, or from anywhere via smartphone. From the consumer point of view, this means the opportunity of being "connected 24 hours". Internet doesn't mean anything without a device (ICT) that supports and links to the consumer. In general terms, ICT provides information and a consumer with more knowledge feel more powerful and also becoming more demanding (Koco, 2000; Foucault, 1972).

**E-commerce:** It involves the buying and selling of products or services over electronic mean such as the Internet and other computer networks. With the advent of the Internet and the World Wide Web in the mid-90s, e-commerce began referring mainly to the sale of goods and services via the Internet, with payment using electronic media such as credit cards. E-commerce has several characteristics: ubiquity, global reach, universal standards. The term ubiquity refers to the possible access to Internet anywhere in the world during work or at home with the computer or mobile phone, while global reach means e-commerce has already spread globally. Both concepts imply that a person residing anywhere in the world can buy something whose manufacture is on the other side of the world. Universal standards refer to the idea of one world market place where prices are unified.

**Customization:** From the point of view of the company is the possibility to give the consumer what they want within a range of options. Rather than forming a global market in which products are produced equal for all consumers, the Internet develops into a consumer market fragmentation (Yancey, 2000), because each customer wants to obtain personalized products. Fragmentation does not imply less powered Customers, it creates an opportunity for suppliers to develop personalized products

**Customer relationship management, CRM:** It has been defined several times for different authors, but the definition that suits this project is related with seeking Customer retention using a variety of marketing tactics that lead to the supplier staying in touch with the Customer after a sale is made (Vavra, 1992).

**Search engines:** A search engine is a computer system that searches for files stored on Web servers thanks to its "spider" (or Web crawler). Searches are done with keywords or hierarchical tree, the search result is a list of web addresses where issues mentioned keywords searched.

Search engines look through the pages gathering information on the contents of the pages. When some information is searched by the engines, they check their database and present results sorted by relevance. Search engines can store everything from the entry page to all the pages that reside on a server. As they operate automatically, search engines usually contain more information than directories. Nowadays, Internet has become a tool for finding information quickly and on any topic of interest, in any area of science, from anywhere in the world and at all times.

**Community manager:** The Community Manager is the professional responsible for building, managing and administering the online community around a brand online by creating and maintaining stable and lasting relationships with Customers, fans and in general, anyone interested in the brand.

**Personal privacy:** Some authors suggest that it is more useful to view privacy as the interest that individuals have in protecting personal information, personal property, or personal space while others think about privacy as a moral or legal right. For example, Posner (1978) suggested that privacy can be viewed in terms of an economic interest and the information about individuals can be thought of in terms of personal property that could be sold in the commercial sphere. Clarke (1999) has suggested that privacy can be thought of as an "interest individuals have in sustaining personal space free from interference by other people and organizations". Some nations have preferred to approach issues related to individual privacy as issues of "data protection" for individuals rather than in terms of a normative concept that needs philosophical analysis. On the other hand, discussions involving the concept of privacy as a legal right are rooted in extensive legal and philosophical argumentation and because of that new regulation about privacy is being developed in almost all developed countries.

**Business-to-consumer (B2C)** electronic commerce involves retailing products and services to individual shoppers. BarnesandNoble.com, which sells books, software, and music to individual consumers, is an example of B2C e-commerce (Laudon and Laudon, 2012).

**Business-to-business (B2B)** electronic commerce involves sales of goods and services among businesses. ChemConnect's Web site for buying and selling chemicals and plastics is an example of B2B e-commerce (Laudon and Laudon, 2012).

**Consumer-to-consumer (C2C)** electronic commerce involves consumers selling directly to consumers. For example, eBay, the giant Web auction site, enables people to sell their goods to other consumers by auctioning their merchandise off to the highest bidder, or for a fixed price. Craigslist is the most widely used platform used by consumers to buy from and sell directly to others (Laudon and Laudon, 2012).

**Generation:** Howe and Strauss (1991, p.429) define a generation as ‘a cohort-group of people whose length approximates the span of a phase of life and whose boundaries are fixed by peer personality’ and also as a group of people that share a time and space in history that lends them a collective persona. McCrindle (2010) adds that, while age influences behavior and attitudes, the major impact is given by the culture in which a person lives his or her youth, as well as social significant events during the formative years of that person. According to this author, it is the birth rates, together with the social changes and trends, that give a solid basis to generational definitions.

## Appendix 2 Internet

Internet history dates back to the early development of communication networks. The idea of a computer network intended to allow general communication between users of various computers is both technological developments and the merger of the infrastructure of the existing network and telecommunications systems.

In the nineties World Wide Web (WWW) was introduced, which became common. Internet infrastructure spread across the world, to create the modern global network of computers we know today. Western countries went through and tried a penetration in developing countries, creating a global access to information and unprecedented communication. In these graphics appears the evolution of the Internet:

Table A. Internet records (International Telecommunications Unions, 2013).

	2005	2010	2013
<b>World population</b>	6.5 billion	6,9 billion	7,1 billion
<b>Not using Internet</b>	84%	70%	61%
<b>Using Internet</b>	16%	30%	39%
<b>Users in the developing world</b>	8%	21%	31%
<b>Users in the developed world</b>	51%	67%	77%

	2005	2010	2013
<b>Africa</b>	2%	10%	16%
<b>América</b>	36%	49%	61%
<b>Arabic Sates</b>	8%	26%	38%
<b>Asia and Pacific</b>	9%	23%	32%
<b>Europe</b>	46%	67%	75%
<b>commonwealth of Independent States</b>	10%	34%	52%





3. Thanks to the Internet I keep contact with some friends that otherwise I wouldn't be in touch.

Strongly agree                      Neutral                      Strongly Disagree

4. The Internet eliminates cultural and religious barriers

Strongly agree                      Neutral                      Strongly Disagree

5. It is possible to meet people similar to me on forums, blogs and social networks

Strongly agree                      Neutral                      Strongly Disagree

6. I can help to improve the politics of my country through the Internet

Strongly agree                      Neutral                      Strongly Disagree

7. I consider that the Internet makes me more sociable

Strongly agree                      Neutral                      Strongly Disagree

8. The Internet reduces stereotypes because I do not see the person I write to

Strongly agree                      Neutral                      Strongly Disagree

9. I feel I belong to some kind of group on the Internet

Strongly agree                      Neutral                      Strongly Disagree

10. I consider voting through the Internet is a useful tool

Strongly agree                      Neutral                      Strongly Disagree

## Part 2

11. If computer A costs 111 euro and computer B costs 100 euro + 18% sending cost, which one is cheaper?

A                      B                      Same price

12. Imagine you receive by post a DVD that you have not ordered, together with a 25 Euros bill for the products. Are you obliged to pay the bill?

Yes                      No  
                     

13. When buying a product, how often do you compare the prices of the different brands available?

Always                      Fairly many times                      Never  
                                                                                                                                   

14. Imagine that a new washing machine you bought 14 months ago breaks down. You didn't buy any extended commercial guarantee. Do you have the right to have it repaired or replaced for free?

Yes                      No  
                     

15. How often do you compare the price of primary goods by looking at the price per unit measure for example, price per kilo, per meter or per liter?

Always                      Fairly many times                      Never  
                                                                                                                                   

16. As a consumer, if you have a good experience related to a good, a service, a retailer or a provider, how often do you recommend others to purchase this product or service?

Always                      Fairly many times                      Never  
                                                                                                                                   

17. Suppose you ordered a good by post, phone or the Internet, do you think you have the right to return the good you ordered 4 days after its delivery and get your money back, without giving any reason?

Yes                      No  
                     

18. How often do you read terms and conditions when you purchase a product or a service?

Always                      Fairly many times                      Never  
                                                                                                                                   

19. Imagine you purchase car insurance over the telephone, the internet or by post. Two days later you find a better deal with another provider and you decide to cancel the original contract. Do you have the right to do that?

Yes                      No

20. Imagine an advertisement saying: "Free alarm clock, just call this number to collect it". You call the number and later you discover that it is a very costly premium rate telephone number. Was the advertisement legal?

Yes                      No  
                     

21. How often do you listen to programs on the TV (and radio) providing information on consumers rights?

Always                      Fairly many times                      Never  
                                   

22. How often do you search for information on your rights as a consumer?

Always                      Fairly many times                      Never  
                                   

23. As a consumer, if you have a bad experience related to a good, a service, a retailer or a provider, how often do you recommend others against purchasing this product or service?

Always                      Fairly many times                      Never  
                                   

### Part 3

How would you rate the importance of the following statements "as a guiding principle in YOUR life":

24. Having the feeling of power that money can bring.

Most important                      Least importance  
                             

25. Being wealthy.

Most important                      Least importance  
                             

26. Having people doing what I say.

Most important                      Least importance

27. Being the one who tells other what to do.

Most important

Least importance

## Part 4

### Some individual information

28. How old are you?

- Under 25 years old
- 25 years old or over 25 years old

29. What is your nationality?

- Portuguese
- Spanish
- Other

30. Are you male or female?

- Male
- Female

31. How do you define yourself as an Internet user?

- A daily user
- A weekly user
- A monthly user
- A non-user

32. How many years of full-time education have you completed?

(from primary school to university) \_\_\_\_\_

33. What is your primary occupation?

- unemployed
- employed
- student
- retired
- housekeeper

## Portuguese version

O objetivo deste questionário é medir as diferentes facetas de capacitação entre os consumidores, bem como a percepção e uso da Internet. As informações pessoais fornecidas no questionário é confidencial, e o anonimato é garantido. A pesquisa é conduzida por Eric Díaz Rodríguez, que está a reunir informações para escrever a sua tese de mestrado no Instituto Superior Técnico, Lisboa. Não há respostas certas ou erradas. Por favor, responda a todas as perguntas, expressando os seus verdadeiros sentimentos. Obrigado pelo seu tempo.

Escolha só uma resposta por pergunta

## Primeira parte

1. A Internet facilita a expressão dos pensamentos e sentimentos.

Concordo plenamente  
totalmente

Neutral

Discordo

2. A Internet melhora as minhas habilidades sociais.

Concordo plenamente  
totalmente

Neutral

Discordo

3. Graças à Internet, eu mantenho contato com alguns amigos que, caso contrario, já não contactaria.

Concordo plenamente  
totalmente

Neutral

Discordo

4. A Internet elimina as barreiras culturais e religiosas.

Concordo plenamente  
totalmente

Neutral

Discordo

5. É possível conhecer pessoas semelhantes a mim em fóruns, blogs e redes sociais.

Concordo plenamente  
totalmente

Neutral

Discordo

6. Eu posso ajudar a melhorar a política do meu país através da Internet.

Concordo plenamente  
totalmente

Neutral

Discordo

7. Eu considero que a Internet me torna mais sociável.

Concordo plenamente  
totalmente

Neutral

Discordo

8. A Internet reduz os estereótipos, porque eu não vejo a pessoa para quem escrevo.

Concordo plenamente  
totalmente

Neutral

Discordo

9. Eu sinto que eu pertenço a algum tipo de grupo na Internet.

Concordo plenamente          Neutral          Discordo

10. Eu considero que a votação através da Internet é uma ferramenta útil.

Concordo plenamente          Neutral          Discordo

## Segunda parte

11. Se o computador A custa 111 € e o computador B custa 100 € + 18% de portes de envio, qual é o computador mais barato?

A  B  Têm o mesmo preço

12. Imagine que recebe pelo correio um DVD que não tinha encomendado, juntamente com uma factura de 25 euros para pagar. Acha que está obrigado a pagar a conta?

Sim  Não

13. Quando compra um produto, quantas vezes compara os preços das diferentes marcas disponíveis?

Sempre    Bastante      Nunca

14. Imagine que a máquina de lavar roupa que comprou há 14 meses avaria e que não comprou uma extensão da garantia comercial. Acha que tem o direito de ter a máquina reparada ou substituída por outra de forma gratuita?

Sim  Não

15. Quantas vezes compara o preço dos bens de grande consumo, olhando para o preço por unidade de medida, por exemplo, o preço por quilo, por metro ou por litro?

Sempre    Bastante      Nunca

16. Como consumidor, se tem uma boa experiência relacionada com um bem, um serviço, ou um fornecedor, quantas vezes recomenda a outros a compra deste bem ou serviço?



Como classificaria a importância das seguintes afirmações "Como princípios orientadores **na sua vida**":

24. Ter a sensação de poder que o dinheiro pode trazer.

O mais importante

O menos importante

25. Ser rico.

O mais importante

O menos importante

26. Ter as pessoas a fazerem o que eu digo.

O mais importante

O menos importante

27. Ser aquele que diz aos outros o que fazer.

O mais importante

O menos importante

### Quarta parte

28. Quantos anos você tem?

- menos do que 25 anos
- 25 anos ou mais do que 25 anos

29. Qual é a sua nacionalidade?

- Português
- Espanhol
- outro

30. Qual o seu género?

- Masculino
- Feminino

31. Em termos de utilização da Internet, como se define a si mesmo?

- Utilizador diário
- Utilizador semanal
- Utilizador mensal
- Eu não utilizo internet

32. Quantos anos de educação completou (Da escola primária à universidade)?

33. Qual é a sua principal ocupação?

- Desempregado
- Empregado
- Estudante
- Reformado
- Dona de casa

Obrigado



## Spanish version

El propósito de este cuestionario es medir las diferentes facetas en las que el consumidor puede ver incrementado su poder haciendo referencia también a la percepción y el uso de Internet. La información personal que se provea en este cuestionario es confidencial y el anonimato es asegurado. La encuesta es conducida por Eric Díaz Rodríguez que está reuniendo información para escribir su tesis en el Instituto Superior Técnico de Lisboa. No hay respuestas correctas o incorrectas. Por favor exprese lo que realmente piensa. Gracias por su tiempo.

Escoja sólo una respuesta.

### Primera parte

34. Internet facilita la expresión de pensamientos y sentimientos.

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

35. Internet mejora mis habilidades sociales.

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

36. Gracias a Internet mantengo el contacto con algunos amigos con los cuales si no fuera de esta manera no mantendría el contacto.

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

37. Internet elimina barreras culturales y religiosas.

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

38. Es posible encontrar personas similares a mí en redes sociales, forums o blogs.

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

39. Puedo ayudar a mejorar la política de mi país a través de Internet

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

40. Considero que Internet me hace ser más sociable

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

41. Internet reduce los estereotipos porque no veo a la persona que estoy escribiendo

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                          

42. Siento que pertenezco a algún tipo de grupo en Internet

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

43. Considero que votar a través de Internet es una herramienta útil

Totalmente de acuerdo                      Neutro                      Totalmente en desacuerdo  
                       

## Segunda parte

44. Si el ordenador A cuesta 111 euros y el ordenador B cuesta 100 euros + un 18% en concepto de costes de envío, ¿cuál de ellos es más barato?

A                      B                      Tienen el mismo precio  
                                           

45. Imagina que recibes por correo postal un DVD que no habías ordenado junto con una factura de 25 euros por el producto. ¿Estás obligado a pagar la factura?

Sí                      No  
                     

46. ¿Cada cuánto comparas precios de diferentes marcas?

Siempre                      Normalmente                      Nunca  
                                                                                       

47. Imagina que la nueva lavadora que compraste hace 14 meses se rompe. No compraste ninguna garantía adicional. ¿Tienes el derecho de tenerla reparada o reemplazada de forma gratuita?

Sí                      No  
                     

48. ¿Tienes la costumbre de comparar el precio de productos primarios mirando el precio por unidad de medida, por ejemplo precio por kilo, precio por metros o precio por litros?

Siempre                      Normalmente                      Nunca  
                                                                                       

49. Como consumidor, si tienes una buena experiencia relacionada con un producto, un servicio o un proveedor, ¿recomienda a otros comprar este producto o servicio?

Siempre                      Normalmente                      Nunca

50. Imagina que ordenaste un producto por correo, móvil o Internet. ¿Piensas que tienes el derecho de devolver el producto que ordenaste, 4 días después de haberlo recibido, y que te devuelvan el dinero sin dar ninguna explicación?

Sí                      No  
                     

51. ¿Sueles leer los términos y condiciones cuando compras un producto o servicio?

Siempre                      Normalmente                      Nunca  
                                                                                                             

52. Imagina que compras un seguro de coche por teléfono, Internet o por correo. Dos días después descubres una mejor oferta con otro proveedor y decides cancelar el contrato original. ¿Tienes el derecho de hacerlo?

Sí                      No  
                     

53. Imagina un anuncio diciendo: "Te regalamos un despertador de forma gratuita, sólo tienes que llamar a este número para recogerlo". Después de llamar descubres que el número de teléfono era de pago. ¿El anuncio es legal?

Sí                      No  
                     

54. ¿Tienes la costumbre de escuchar programas de televisión o radio en los cuales se habla sobre los derechos de los consumidores?

Siempre                      Normalmente                      Nunca  
                                                                                                             

55. ¿Sueles buscar información sobre tus derechos como consumidor?

Siempre                      Normalmente                      Nunca  
                                                                                       

56. Como consumidor, si tienes una mala experiencia relacionada con un producto, servicio o proveedor, ¿recomiendas a otras personas en contra de comprar este producto o servicio?

Siempre                      Normalmente                      Nunca  
                                                                                       

### Tercera Parte

Cómo calificarías la importancia de las siguientes frases "como un principio a seguir en tu vida":



## Appendix 4. Factor analysis for Consumer Eempowerment using tetrachoric correlations

As it was written before, consumer empowerment is divided in three sub-pillars where, in total, there are 7 frequency scales questions and 6 dichotomous questions.

The first sub-pillar, basic numerical skills that has only one dichotomous question, does not add relevant information because almost everybody (94%) was able to give the right answer. For that reason it was deleted from the analysis. The other 2 sub-pillars, engagement and awareness of legislation should be studied separately because the 7 variables of consumer engagement are frequency scales and the variables of awareness of legislation are dichotomous. The reason is that frequency scales of 7 points use Pearson correlations while dichotomous questions use tetrachoric correlations (special case of polychoric and polyserial correlations when the variables are only dichotomous).

### Factor analysis Consumer awareness of legislation

For the six variables there was assigned 1 to the right answer and 0 for the wrong answer.

In our case the researcher has to use tetrachoric correlation because is the one used for binary data, while the polychoric correlation is used for ordered-category data. Basically, they estimate what the correlation between variables would be if ratings were made on a continuous scale. They are supposed to be, theoretically, invariant over changes in the number or "width" of rating categories.

These statistics make certain assumptions. In polychoric correlation, the assumptions can be tested. The assumptions cannot be tested with the tetrachoric correlation because there are only two raters (1 and 0 in our case) (Uebersax, 2011).

So the first thing the researcher has to do is search for the correlation matrix tetrachoric in the 5 dichotomous variables which appears on table B.

Table B. Tetrachoric correlations for dichotomous variables

variable	Tetrachoric Correlations Cos pi Formula				
	UNFAIRPRACTI CES1	GUARANT EED	COOLINGO FF1	COOLINGO FF2	UNFAIRPRACTI CES2
UNFAIRPRACTI CES1	1,000				
GUARANTEED	0,018	1,000			
COOLINGOFF1	0,202	-0,036	1,000		
COOLINGOFF2	-0,070	0,220	0,055	1,000	
UNFAIRPRACTI CES2	0,364	-0,040	0,216	-0,002	1,000

Performing factor analysis using these tetrachoric correlations it was found for 1 factor a total variance explained of 30,65% and a eigenvalue of 1,53, which is used to calculate the percentage of variance accounted for the factor (table C)

Table C. Total variance explained in consumer awareness of legislation (5 variables)

Eigenvalue	% Total variance
1,53	30,65

The table D, communalities, shows that there are 2 variables with communalities below 0,3 and for that reason it was decided to delete them and replicate factor analysis with the remaining 3 variables.

Table 8. Communalities 5 variables of consumer awareness of legislation

Variables	Communalities
UNFAIRPRACTICES1	0,57
GUARANTEED	0,01
COOLINGOFF1	0,35
COOLINGOFF2	0,007
UNFAIRPRACTICES2	0,58

The new factor analysis shows a total variance explained of more than 50 % and communalities all over 0,3 (table E and F).

Table E. Total variance explained in consumer awareness of legislation (3 variables)

Value	Eigenvalue	% Total variance
1	1,528351	50,95

Table F. Communalities 3 variables of consumer awareness of legislation

	Communalities
UNFAIRPRACTICES1	0,57
COOLINGOFF1	0,36
UNFAIRPRACTICES2	0,59

The factor loadings are in table G. The solution does not appear rotated as long as there is only one factor. This factor gather the same variables as if the analysis were done as using Pearson correlations although factor loadings are different.

Table G. Factor scores consumer awareness of legislation

	Factor 1
UNFAIRPRACTICES1	-0,76
COOLINGOFF1	-0,60

UNFAIRPRACTICES2	-0,77
------------------	-------

Factor analysis Consumer engagement

The 7 variables that describe consumer engagement use Pearson correlation. Because of that KMO and Bartlett's Test of Sphericity has to be assessed. Both values shows that it is fair to performance factor analysis for the seven variables (table H).

Table H. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,719
Approx. Chi-Square		556,523
Bartlett's Test of Sphericity	df	21
	Sig.	,000

Communalities were all over 0,45 so no variable has to be remove from the analysis. There were found two factors that explain 60,387% of the total variance and the rotated component matrix is the one that follows:

Table I. Rotated Component Matrix<sup>a</sup>

	Component	
	1	2
COMPARINGPRODUCTS1	,680	
COMPARINGPRODUCTS2	,645	
TENDENCYTOTALK2	,796	
READINGTERMSANDCONDITIONS		,749
INTERESTININFORMATION1		,828
INTERESTININFORMATION2		,879
TENDENCYTOTALK1	,736	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Factor 1 and factor 2 have the same variables in each factor as the point in this thesis in “3.2.2. Factor analysis Consumer empowerment”, although factor loadings are slightly different.

## Appendix 5 One variable to define consumer empowerment

### Weight and scores for consumer empowerment

As it was explained in factor analysis page 45, the researcher explored the purpose of creating one unique variable for consumer empowerment. This variable is not a scale because it does not fulfill the psychometrical properties of scales but it can be thought as an index. The variable created for this purpose was called CONSUMER\_EMPOWERMENT and the complexity lies on how to combine the 13 variables that measure consumer empowerment in only 1 variable. For this reason in this section a set of weight and scores is assigned for the 13 variables that form consumer empowerment.

In theory, consumer empowerment has a pyramid structure formed first by pillars and later by sub-pillars. Following the work of Nardo et al. (2011) it was decided to assign the same importance to the three pillars (Skills, Awareness and Engagement) while the sub-pillars have a different weight. In the next figure (B) it can be seen the weight of each sub-pillar. The sum of the weight of each pillar is 1 (0,33 each) and the sum of the weight of each sub-pillar is also 1.

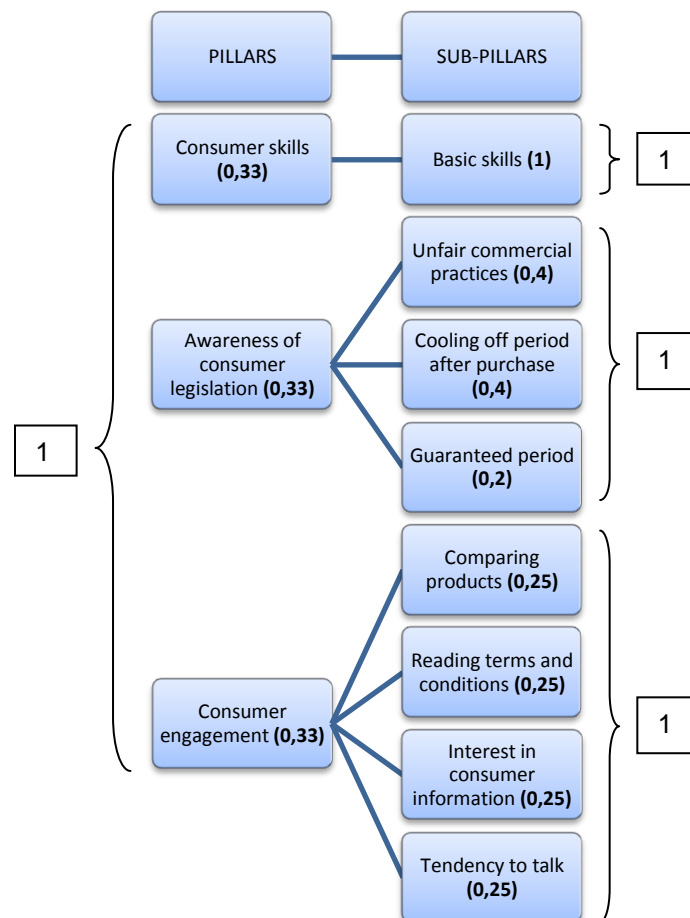


Figure B. Weight and score pillars and sub-pillars consumer empowerment



Some of the sub-pillars may contain several questions. In this case each question has the same weight within the sub-pillar. If one sub-pillar has two questions, each question has a weight of 0,5. If one sub-pillar has three questions each question has a weight of 0,333.

Once it has been decided the weight of the pillars, sub-pillars and questions, the score for each question has to be assigned. There are 7 questions that contain frequency scales and 6 dichotomous questions. Following the explanation Nardo et al. (2011) gave in its paper it was decided to do this:

- Frequency scale questions: since the scale goes from 1 to 7 it was decided that the answer “7” corresponds to a fully empowered consumer and its score is 6 while the answer “1” corresponds to a non empowered consumer and its score is 0.

frequency scale (possible answers)	1	2	3	4	5	6	7
score	0	1	2	3	4	5	6

- Dichotomous questions: the correct answer corresponds to a fully empowered consumer and its score is 6 while the wrong answer has code 0.

Thanks to this coding each question has now the same range (from 0 to 6) because they score the same when the answer corresponds to a fully empowered consumer and they also score the same when the answer corresponds to a non empowered consumer. The difference between both types of question is that frequency scale questions allow a score between 0 and 6:

<p>Possible scores achieved</p> <ul style="list-style-type: none"> <li>• Frequency scales <ul style="list-style-type: none"> <li>• 0,1,2,3,4,5,6</li> </ul> </li> <li>• Dichotomous questions <ul style="list-style-type: none"> <li>• 0,6</li> </ul> </li> </ul>
---

As it can be noticed each variable or question in consumer empowerment has a different importance. In order to clarify weights and scores it is shown in the table J. what would be the score of a fully empowered consumer that gave the best answer to the 13 questions in the questionnaire. This table also shows the mechanism to compute the variable CONSUMER\_EMPOWERMENT.

Regarding table J, the left column describes the name of the variable or question. The next column presents the maximum score, that is the same for all questions. The column after that regards the pillars, whose weight is also the same for all variables, 0,333, while the sub-pillar column, is different and in agreement with figure B. In the column question, the question has a weight of 1 if there is only one question in that sub-pillar, a weight of 0,5 if there are two

questions in the sub-pillar and a weight of 0,333 if there are three questions in the sub-pillar. The **Total value** is obtained by multiplying the four columns: score, pillar, sub-pillar and questions. The variable CONSUMER\_EMPOWERMENT is obtained by summing the **total value** obtained for each question.

Table J. How to compute CONSUMER\_EMPOWERMENT

	score	pillar	sub-pillar	questions	<b><u>total value</u></b>
CONSUMERSKILLS	6	0,333	1	1	2
COMPARINGPRODUCTS1	6	*0,333	*0,25	*0,5	0,25
COMPARINGPRODUCTS2	6	*0,333	*0,25	*0,5	0,25
READINGTERMSANDCONDITIONS	6	*0,333	*0,25	*1	0,5
INTERESTONINFORMATION1	6	*0,333	*0,25	*0,5	0,25
INTERESTONINFORMATION2	6	*0,333	*0,25	*0,5	0,25
TENDENCYTOTALK1	6	*0,333	*0,25	*0,5	0,25
TENDENCYTOTALK2	6	*0,333	*0,25	*0,5	0,25
UNFAIRPRACTICES	6	*0,333	*0,4	*1	0,8
COOLINGOFF	6	*0,333	*0,4	*0,5	0,4
COOLINGOFF	6	*0,333	*0,4	*0,5	0,4
COOLINGOFF	6	*0,333	*0,4	*0,5	0,4
GUARANTEED	6	*0,333	*0,2	*1	0,8
SUM					
CONSUMER-EMPOWERMENT					6

In general the variable CONSUMER\_EMPOWERMENT goes from 0 to 6, 0 for a non empowered consumer and 6 for a fully empowered consumer.

## Comparing with Nardo et al. (2011)

This section will show a comparative study between Portuguese and Spanish regarding the work of Nardo et al. (2011) and between Internet Generation and other generations in terms of consumer empowerment. For this purpose it will be used the variable

CONSUMER\_EMPOWERMENT already explained in the previous section. Later it will be studied the different sub-pillars that forms consumer empowerment by forming 3 variables called numerical\_skills, consumer\_engagement and awareness\_of\_legislation. The variable CONSUMER\_EMPOWERMENT is a scalar that can reach a value between 0 and 6. However the 3 variables that represent the sub-pillars can reach a value between 0 and 2 (see table B on section Weight and scores for consumer empowerment). If we sum the score of the 3 variables we obtained the score of CONSUMER\_EMPOWERMENT.

In table K the results obtained for CONSUMER\_EMPOWERMENT show a mean of 4,04 out of 6 and standard deviation of 0,855. Although it seems that it is a normal distribution (see Figure C) if we divided Kurtosis between its standard deviation it is obtained the value 5,2 which is higher than 3. This result tells us that CONSUMER\_EMPOWERMENT does not follow a strong normal distribution. Skewness divided between its standard deviation has a value of -6,71. Skewness is usually related to the tails or extremes of a normal distribution. If the value is negative it affects to the beginning of the curve while if the value is positive it affects to the end. In our case, the value -6,71 is telling us that CONSUMER\_EMPOWERMENT is not following a normal distribution when the values are small or in the beginning on the normal curve (see red circle in Figure C).

Table K. Statistics  
CONSUMER\_EMPOWERMENT

N	Valid	324
	Missing	0
Mean		4,049885
Std. Deviation		,8554025
Skewness		-,906
Std. Error of Skewness		,135
Kurtosis		1,406
Std. Error of Kurtosis		,270

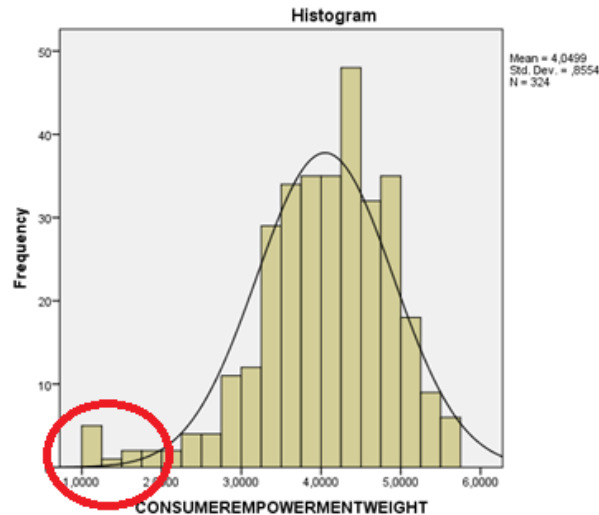


Figure C. Histogram CONSUMER\_EMPOWERMENT

Once it was studied CONSUMER\_EMPOWERMENT for the whole sample it was decided to confront the Spanish values against the Portuguese values (Table L). It was found that in terms of mean the Spanish respondents were more empowered as consumers. It also seems that the Spanish sub-sample has more variance because its standard deviation is higher than the Portuguese sub-sample even when the Spanish sub-sample is smaller.

These results do not agree with work done by Nardo et al. (2011). In their report they used a rank for the 27 countries that formed the European Union. Portugal appears on the position 23 while Spain holds the position 24, although the difference between them is small (in their final score Portugal was 13,7, Spain 13,67 and the average for the countries that belonged to the European Union was 14,97).

Table L. Comparison CONSUMER\_EMPOWERMENT Spanish vs Portuguese

	Spanish	Portuguese
Mean	4,27	3,93
Standard deviation	0,95	0,74

CONSUMER\_EMPOWERMENT among generations seems to be the same as it can be seen in table M. The only difference resides on the standard deviation which is higher for “other Generation”. It is logical if we think that “other generations” contain several generations and thus more variability.

This result does not concord with the work of Nardo et al. (2011). In their work it can be appreciated in the graphic of the page 49 that consumers that belong to the Internet Generation are more empowered than the others among the 27 countries that belong to the European Union.

Table M. Comparison CONSUMER\_EMPOWERMENT Internet Generation vs Other

	Generations	
	Internet Generation	Other Generations
Mean	4,04	4,06
Standard deviation	0,72	1,04

The next step consisted in breaking down CONSUMER\_EMPOWERMENT into the different sub-pillars. The results show that Portuguese respondents achieved a higher score in numerical skills, while the Spanish respondents know more about consumer legislation and tend to have more engagement (table N). The standard deviation for the two sub-samples is similar and it does not add new information (table O).

Table N. Mean on sub-pillars of consumer empowerment. Portuguese vs Spanish

<u>Mean</u>	Numerical skills	Consumer engagement	Awareness of legislation
Portuguese	1,85	1,02	1,06
Spanish	1,78	1,14	1,35

Table O. Standard deviation on sub-pillars of consumer empowerment. Portuguese vs Spanish

<u>Standard deviation</u>	Numerical skills	Consumer engagement	Awareness of legislation
Portuguese	0,53	0,3	0,52
Spanish	0,63	0,35	0,5

In table P Internet Generation appears to have better numerical skills but less knowledge about consumer legislation and less consumer engagement. The standard deviation does not add relevant information. Nardo et al. (2011) found that the Internet Generation is more empowered in the 3 sub-pillars than other generations (see graphic 11 p.49 in Nardo et al.).

Table P. Mean on sub-pillars Internet Generation vs Other Generations

<u>Mean</u>	Numerical skills	Consumer engagement	Awareness of legislation
Internet Generation	1,9	1,02	1,13
Other Generations	1,65	1,15	1,27

Table Q. Standard deviation on sub-pillars Internet Generation vs Other Generations

<u>Standard deviation</u>	Numerical skills	Consumer	Awareness of
---------------------------	------------------	----------	--------------

		engagement	legislation
Internet Generation	0,44	0,3	0,54
Other Generations	0,76	0,35	0,5

Figure D shows CONSUMER\_EMPOWERMENT vs occupation. Nardo et al. (2011) found that students were more consumer empowered than other groups. In this thesis retired people were found to be more empowered than other groups, while students and employed people were at the same level of consumer empowerment.

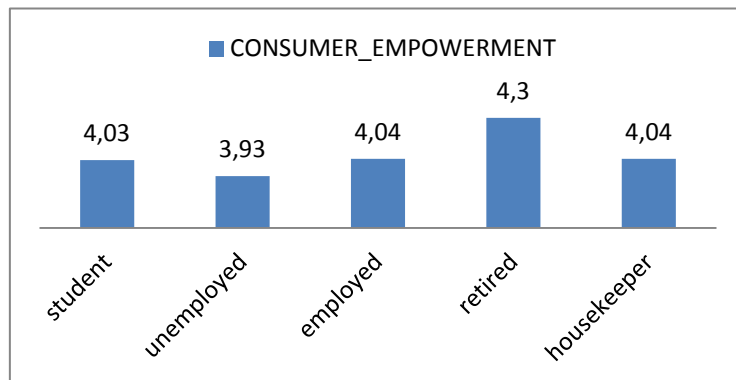


Figure D. CONSUMER\_EMPOWERMENT vs occupation

Regarding the sub-pillars of consumer empowerment structure, Nardo et al. (2011) found that students were more empowered in the three sub-pillars than other groups. In this work students were more empowered only in numerical skills while retired people were more empowered in the other two sub-pillars (see figure E).

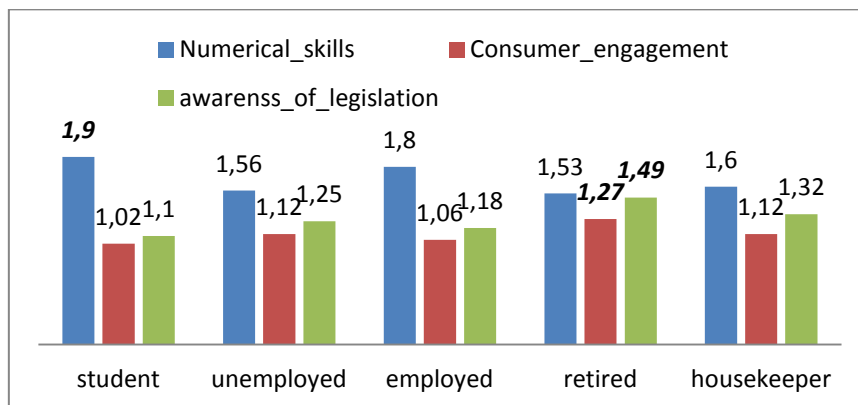


Figure E. 3 sub-pillars vs occupation

## Multiple regression

Taking into account CONSUMER\_EMPOWERMENT, a variable created following the work of Nardo et al. (2011), the first thing to do is to assess the assumptions in multiple regression

analysis: linearity, homoscedasticity and normality. As predictors there were created two summated scales:

- E\_empowerment: average of the 10 variables of e-empowerment
- Power\_values: average of the 4 variables of power values

Linearity is checked by using a scatter plot that confronts the dependent variable with the independent variables. In the next figure it is shown two scatter plots:

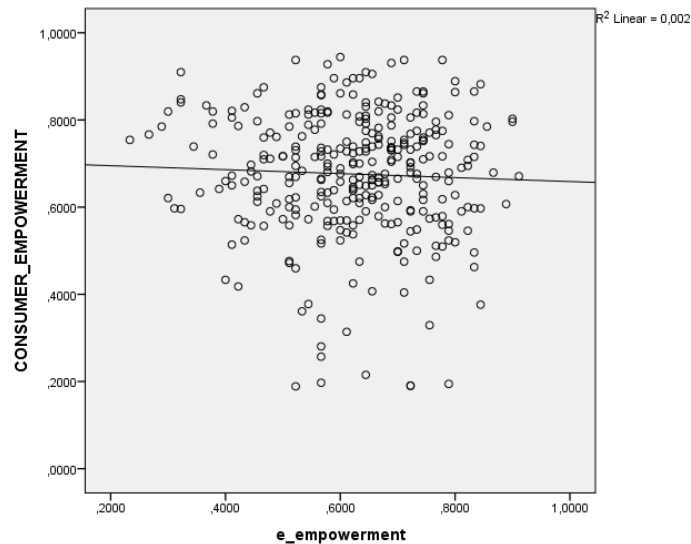


Figure F. CONSUMER\_EMPOWERMENT vs e\_empowerment

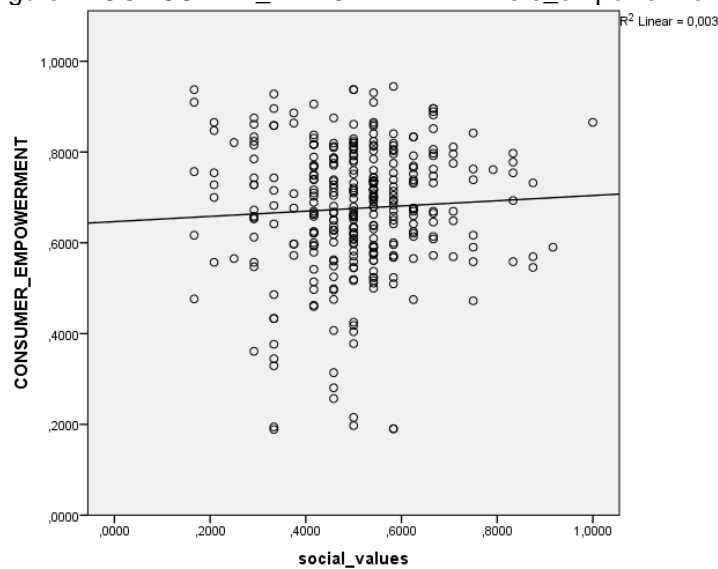


Figure G. CONSUMER\_EMPOWERMENT vs power\_values

As it can be seen they do not follow a linear shape. Even practicing curvilinear regression it seems the solution does not improve because R square does not reach greater values (see Table R, Figure H.).

Table R. Model summary curvilinear regression

Dependent Variable: CONSUMER\_EMPOWERMENT

Equation	Model Summary				
	R Square	F	df1	df2	Sig.
Linear	,002	,566	1	322	,452
Logarithmic	,003	,879	1	322	,349
Quadratic	,004	,719	2	321	,488
Cubic	,009	,936	3	320	,424

The independent variable is e\_empowerment.

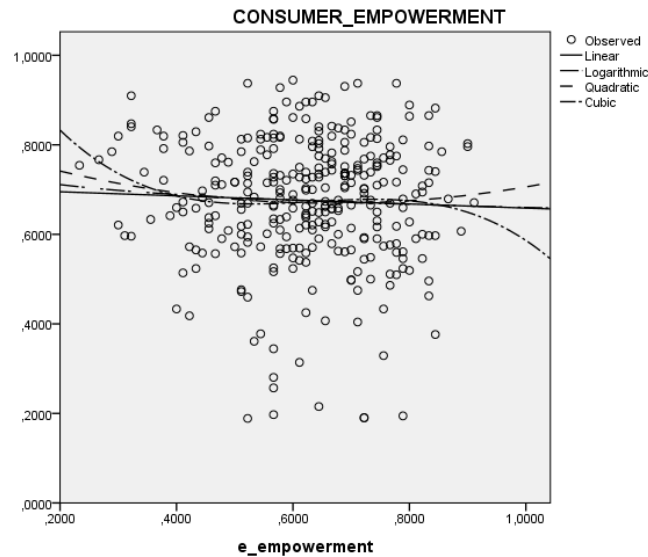


Figure H. CONSUMER\_EMPOWERMENT vs e\_empowerment, curvilinear regression

Although the assumption of linearity is not true, it was decided see if the others assumptions were met. Normality is measured by two tests, Kolmogorov Smirnov and Shapiro Wilk. Both tests are significant which means that the independent variables follow a normal distribution.

Table S. Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
e_empowerment	,062	324	,005	,985	324	,002
power_values	,118	324	,000	,972	324	,000

a. Lilliefors Significance Correction

Apart from these two statistical tests the Q-Q plot also shows a normal distribution as it can be seen in the two figures below (more or less the point follow the line):



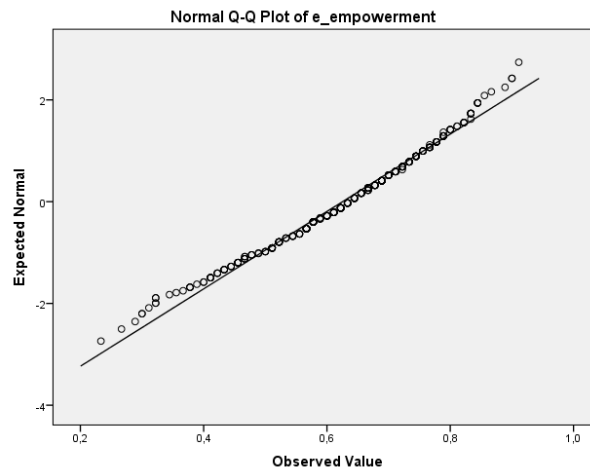


Figure I. Normal Q-Q plot for e\_empowerment

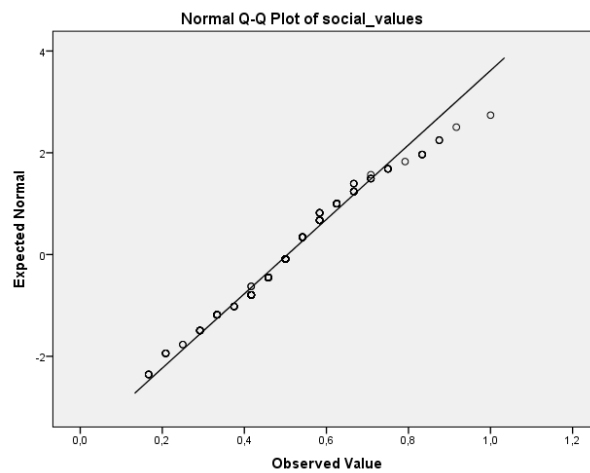


Figure J. Normal Q-Q plot for power\_values

The assumption of homoscedasticity will be discussed at the same time as multiple regression is performed even though linearity assumption is not met.

The first step is taking a look in the correlation matrix. It can be predicted that those dependent variables with high correlations with the dependent variable will be included in the regression equation. It can also be predicted that if there is low correlation between independent variables, e\_empowerment and power\_values, there won't be problems with multicollinearity (violation of the assumption of independence, Hair et al. 2009). The next table shows that there are no significant correlations between the independent variables and the dependent variables:

Table T. Correlations

		CONSUMER_E MPOWERMEN T	e_empowermen t	power_values
CONSUMER_EMPOWERMENT	Pearson Correlation	1	-,042	,055
	Sig. (2-tailed)		,452	,323
	N	324	324	324
e_empowerment	Pearson Correlation	-,042	1	,159**
	Sig. (2-tailed)	,452		,004
	N	324	324	324
power_values	Pearson Correlation	,055	,159**	1
	Sig. (2-tailed)	,323	,004	
	N	324	324	324

\*\* . Correlation is significant at the 0.01 level (2-tailed).

This means that even if SPSS is able to introduce these variables in the regression equation, the results will be poor. In fact, trying to performance multiple regression none of the variables were introduced as significant predictors so it can be concluded that CONSUMER\_EMPOWERMENT cannot be predicted by e\_empowerment or power\_vales:

Table U. Warnings

No variables were entered into the equation.
--

Once it was tried the prediction using the two summated scales as dependent variable it was decided to perform the multiple regression introducing as predictors the 10 variables that compose e-empowerment and the 4 that compose power values. In this case when running SPSS, 2 variables were introduced in the model using stepwise criteria, *interpersonal\_3* and *citizenship\_2*. The problem here appears in the low value of R square that was 0,043 (see table V). This value indicates the percentage of total variation of the independent variables explained by the regression model (Hair et al., 2009). R square of 0,043 means that only 4,3% of CONSUMER\_EMPOWERMENT is predicted by the regression model. Obviously this is a poor result so it can be concluded that CONSUMER\_EMPOWERMENT cannot be predicted by 10 variables of e\_empowerment and the 4 of social\_values.

Table V. Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,142 <sup>a</sup>	,020	,017	,1415092	
2	,208 <sup>b</sup>	,043	,037	,1400321	1,741

a. Predictors: (Constant), interpersonal\_3

- b. Predictors: (Constant), interpersonal\_3, citizenship\_2
- b. Dependent Variable: CONSUMER\_EMPOWERMENT

## Logistic regression, nationality

The first logistic regression to be performed will have as dependent variable the nationality and as predictors CONSUMER\_EMPOWERMENT, e\_empowerment and power\_values. The next table shows there are 26 missing cases that correspond to those respondents that are not Portuguese or Spanish (coded as 0 and 1 respectively).

Table X. Case Processing Summary

Unweighted Cases <sup>a</sup>		N	Percent
	Included in Analysis	298	92,0
Selected Cases	Missing Cases	26	8,0
	Total	324	100,0
Unselected Cases		0	,0
Total		324	100,0

- c. If weight is in effect, see classification table for the total number of cases.

SPSS provides a Block 0 with non variables as predictors. In our case SPSS is telling us that the researcher can predict 57% without performing any logistic regression model. This value corresponds to the number of Portuguese people in total sample (170 of 298). It is important to notice that this is the value the researcher should improve.

Table Y. Classification Table<sup>a,b</sup>

	Observed	Predicted		
		nationality_binary		Percentage Correct
		Portuguese	Spanish	
Step 0	Portuguese	170	0	100,0
	Spanish	128	0	,0
	Overall Percentage			57,0

- a. Constant is included in the model.
- d. The cut value is ,500

The next table shows which variables are significant and can be introduced in the equation model. As it can be seen CONSUMER\_EMPOWERMENT and power\_values should enter while e\_empowerment not.

Table Z. Variables not in the Equation

		Score	df	Sig.
Step 0	Variables			
	CONSUMER_EMPOWERMENT	11,830	1	,001
	e_empowerment	,039	1	,843
	power_values	7,205	1	,007
Overall Statistics		20,431	3	,000

Table AA presents several indicators of the overall fit of the model. For this case, when introducing the two variables in the model the statistical test -2 Log likelihood had an improvement. Nagelkerke R square value indicates that the introduction of the two independent variables in the model explains 9,3% of the variance in the dependent variable.

Table AA. Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	385,875 <sup>a</sup>	,069	,093

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

Another indicative of statistical quality of the model is the Hosmer and Lemeshow test. The observed values and the expected values are used to calculate the test statistic. we can conclude that the values estimated by the model are close to observed values and the model fits the data when this test is not significant and in our case it does because  $0,078 > 0,05$  (Hair et al. 2006).

Table AB. Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	14,159	8	,078

The table AC summarizes the classification of the respondents observed and predicted by the model. It appears that the model is able to predict when the respondent is Portuguese in the 82,4% of the cases and when is Spanish in the 42,2% of the cases. Overall, the model can correctly predict 65,4% of the cases relating to nationality. Taking in account that the first model, without predictors, is able to predict 57% of the cases, the improvement introducing the two variables is 8,4% which is reasonable good.

Table AC. Classification Table<sup>a</sup>

	Observed	Predicted		
		nationality_binary		Percentage Correct
		Portuguese	Spanish	
Step 1	Portuguese	140	30	82,4
	Spanish	74	54	42,2
	Overall Percentage			65,4

a. The cut value is ,500

The estimation of the model parameters is described in Table AD. The logistic coefficients for CONSUMER\_EMPOWERMENT (B=0,465) and power\_values (B=-0,356) are all significant at the 0,05 level. Thus these two variables can be used to explain, identify and interpret the relationship that affects the predicted probabilities.

The sign of B reveals there is a positive relationship between CONSUMER\_EMPOWERMENT and the predicted probability while it occurs the opposite for power\_values. The most direct method of assessing the magnitude of the change in probability due to each predictor is to examine the exponentiated coefficients (last column).

The column Exp (B), is the exponential of the estimated coefficients of the independent variables in the model (column B). It represents the ratio of the odds of the dependent variable per unit increase in the independent variable, which can be presented as a percentage using the following formula: Percentage change in odds =  $(\exp(B) - 1) \times 100$  (Hair et al. 2006).

Thus, beginning with the most significant variable, it appears that the odds increases 59,1% when the variable CONSUMER\_EMPOWERMENT increases 1 unit and the other variables are not altered. This means that the chances of being Spanish increases almost 60% when consumer empowerment increases. Regarding power\_values looking to the result one can conclude that when one has consumers that tend to value resources and dominance over peers, it will be more probable that we are looking at Portuguese consumers.

Table AD. Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>						
CONSUMER_EMPOWERMENT	,465	,132	12,295	1	,000	1,591
power_values	-,356	,125	8,061	1	,005	,701
Constant	-,319	,122	6,854	1	,009	,727

a. Variable(s) entered on step 1: CONSUMER\_EMPOWERMENT, power\_values.

## Logistic regression, age

The next logistic regression will try to predict if the respondent belongs to the Internet Generation or not. It will be coded as 1 the response “under 25 years old” and coded as 0 the answer “25 years old or more than 25 years old”. As it was done before the predictor will be first the 3 variables CONSUMER\_EMPOWERMENT, power\_values and e\_empowerment.

The model without variables entered has an overall percentage of 61,4% which means that 61,4% of the respondents belongs to the Internet Generation. The unique variable that is significant and should be introduced in the logistic model is power\_values as it can be seen in the table below:

Table AE. Variables not in the Equation

		Score	df	Sig.
Step 0	Variables			
	e_empowerment	3,082	1	,079
	power_values	6,857	1	<b><u>,009</u></b>
	CONSUMER_EMPOWERMENT	,062	1	,804
	Overall Statistics	8,805	3	,032

The statistical test to assess the overall fit model shows poor values. As it can be appreciated in the table below (table AF) the value of Nagelkerke R square indicates that introducing variables to the model explained only 2,9% of the variance of the dependent variable.

Table AF. Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	425,132 <sup>a</sup>	,021	,029

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

In fact Hosmer and Lemeshow Test is significant at level 0,05 which means that the model found is not useful to predict the dependent variable (see table AG). For this reason it was decided to stop this model here because is useless.

Table AG. Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	27,290	7	,000

## Validity and reliability of constructs

Discriminant validity was tested using the variables e\_empowerment, power\_values and CONSUMER\_EMPOWERMENT. The next table shows a symmetric matrix where in the diagonal it appears the Cronbach's alpha for the 3 variables and in the rest of the matrix the Pearson correlation between variables.

Table AH. Discriminante validity

	CONSUMER EMPOWERMENT	e_empowerment	power_values
CONSUMER EMPOWERMENT	0,678		
e_empowerment	-0,042	0,843	
power_values	0,055	,159**	0,717
**. Correlation is significant at the 0.01 level (2-tailed).			

To assess and confirm discriminant validity Pearson Correlation has to be smaller than Cronbach's Alpha. As it can be seen in the table it fulfills the condition so discriminant validity is confirmed.

## Conclusions obtained using the index CONSUMER\_EMPOWERMENT

This section presents the findings obtained when using the variable CONSUMER\_EMPOWERMENT. Some parts are focused on comparing with the work done by Nardo et al. (2011).

### Descriptive analysis

Regarding the comparison between Portuguese and Spanish respondents the conclusions are:

- Spanish population is slightly more consumer empowered than the Portuguese one specially in the sub-pillar awareness of consumer legislation.

Regarding the comparison between Internet Generation and other generations the researcher may conclude that:

- Internet generation has better numerical skills while others generations know more about legislation.

Regarding consumer empowerment, and comparing the results found with the work of Nardo et al. (2011) used as an external standard, the conclusions are:

- The sample of 324 is a convenience sample, and by that it doesn't represent the population, which could explain the different results obtained by Nardo et al. (2011)
- Criterion-related validity cannot be assessed as it does not have the same results as Nardo et al. (2011). Some concerns arise from the creation of the variable CONSUMER\_EMPOWERMENT.

#### Multiple regression

The results found with multiple regression were not satisfactory due to the lack of correlation between consumer empowerment and the other two parts of the questionnaire: e-empowerment and power values. The conclusions that may arise from this fact are:

- Consumer empowerment is something independent from e-empowerment and power values and for that reason we cannot predict consumer empowerment as a function of the other 2 variables, or the weight and scores used to compute CONSUMER\_EMPOWERMENT do not really represent consumer empowerment. In such case, consumer empowerment should be split into the three factors found in the factor analysis.

#### Logistic regression

Regarding nationality, the main conclusions are:

- E\_empowerment cannot be used to predict nationality. This conclusion agrees with the descriptive analysis where the difference in terms of e-empowerment between Portuguese and Spanish was almost null.

Regarding age, the conclusions are:

- It was impossible to predict the generation using e\_empowerment, power\_values and CONSUMER\_EMPOWERMENT.

**Due to the bad values obtained in multiple regression and logistic regression using the index CONSUMER\_EMPOWERMENT, it was decided to split consumer empowerment into the 3 factors obtained in the factor analysis.**



## Appendix 6 Factor analysis tables

USING PEARSON CORRELATIONS

Table AI. Rotated Component Matrix consumer empowerment Portuguese sub-sample<sup>a</sup>

	Component		
	1	2	3
COMPARINGPRODUCTS1	,756		
COMPARINGPRODUCTS2	,686		
TENDENCYTOTALK2	,750		
READINGTERMSANDCON DITIONS		,804	
INTERESTININFORMATIO N1		,798	
INTERESTININFORMATIO N2		,865	
TENDENCYTOTALK1	,686		
COOLINGOFF1			,817
UNFAIRPRACTICES2			,638

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Table AJ. Rotated Component Matrix e-empowerment Portuguese sub-sample<sup>a</sup>

	Component	
	1	2
PERSONAL1		,518
PERSONAL2	,598	
INTERPERSONAL1		,719
INTERPERSONAL2	,735	
CITIZENSHIP1	,689	
INTERPERSONAL3	,711	
INTERPERSONAL4	,643	
GROUP2	,672	
CITIZENSHIP2		,800

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table AK. Rotated Component Matrix e-empowerment sub-spanish sample<sup>a</sup>

	Component	
	1	2
PERSONAL2	,682	
INTERPERSONAL1		,690
INTERPERSONAL2	,483	
GROUP1		,714
CITIZENSHIP1		
INTERPERSONAL3	,796	
INTERPERSONAL4	,717	
GROUP2	,630	
CITIZENSHIP2		,705

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table AL. Rotated Component Matrix consumer empowerment Spanish sub-example<sup>a</sup>

	Component		
	1	2	3
COMPARINGPRODUCTS1		,624	
COMPARINGPRODUCTS2		,603	
TENDENCYTOTALK2		,840	
READINGTERMSANDCON DITIONS	,700		
INTERESTININFORMATIO N1	,829		
INTERESTININFORMATIO N2	,886		
TENDENCYTOTALK1		,671	

COOLINGOFF1			,749
COOLINGOFF2			,793

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

## USING TETRACHORIC CORRELATIONS

Table AM. Factor scores consumer awareness for Portuguese sub-sample tetrachoric correlation

Variable	Tetrachoric Correlations Cos pi Formula	
	Factor 1	
UNFAIRPRACTICES1		-0,445126
COOLINGOFF1		-0,481483
UNFAIRPRACTICES2		-0,526159

Table AN. Factor scores for consumer awareness of legislation Spanish sub-sample tetrachoric correlation

Variable	Tetrachoric Correlations Cos pi Formula	
	Factor 1	
UNFAIRPRACTICES1		-0,427244
COOLINGOFF2		-0,470929
UNFAIRPRACTICES2		-0,586290

## Appendix 7 Logistic regression tables

Table AO. Model Summary C\_engagement\_knowledge whole sample<sup>d</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,183 <sup>a</sup>	,033	,030	,96326232	
2	,221 <sup>b</sup>	,049	,043	,95710124	
3	,253 <sup>c</sup>	,064	,055	,95098291	1,578

- a. Predictors: (Constant), e\_empowerment\_improver
- b. Predictors: (Constant), e\_empowerment\_improver, e\_empowerment\_facilitator
- c. Predictors: (Constant), e\_empowerment\_improver, e\_empowerment\_facilitator, genre
- d. Dependent Variable: c\_engagement\_knowledge

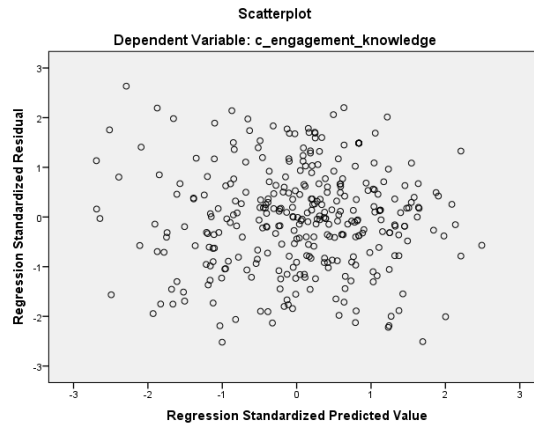


Figure K. Scatterplot residuals s\_engagement\_knowledge

Table AP. C\_engagement\_knowledge tolerance

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	e_empowerment_improver	1,000	1,000
2	(Constant)		
	e_empowerment_improver	1,000	1,000
	e_empowerment_facilitator	1,000	1,000
3	(Constant)		
	e_empowerment_improver	,999	1,001
	e_empowerment_facilitator	,995	1,005
	genre	,995	1,005

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