ANTONIO GARCÍA JIMÉNEZ,
MARÍA CRUZ LÓPEZ DE AYALA LÓPEZ Y
CARMEN GAONA PISIONERO

antonio.garcia@urjc.es, mariacruz.lopezdeayala@urjc.es,
carmen.gaona@urjc.es

Antonio García Jiménez, Profesor de Documentación Informativa y Nuevos Medios. Universidad Rey Juan Carlos. Facultad de Ciencias de la Comunicación. 28943 Madrid.

María Cruz López de Ayala López, Profesora de Teoría de la Información y Dirección de Comunicación. Universidad Rey Juan Carlos. Facultad de Ciencias de la Comunicación. 28943 Madrid.

Carmen Gaona Pisionero, Profesora de Teoría de la Información. Universidad Rey Juan Carlos. Facultad de Ciencias de la Comunicación. 28943 Madrid.

A vision of uses and gratifications applied to the study of Internet use by adolescents

Una visión desde la Teoría de los Usos y Gratificaciones aplicada al estudio del uso de Internet por los adolescentes

ABSTRACT: Based on uses and gratifications theory, the aim of this paper is to identify the reasons for using Internet among teenagers and to check different variables in order to predict types of uses. After conducting a representative survey applied to 397 high school students in Community of Madrid (Spain), Internet users' gratifications and their relationships with variables related to adolescent characteristics, family context and time of online exposure are analyzed. The article concludes that daily use of Internet predicts higher consumption of communication and social relationships.

Key words: Uses y Gratifications, Internet, teenagers, motives of use.

RESUMEN: Con base en la Teoría de los Usos y Gratificaciones, el objetivo de este trabajo es detectar los motivos de uso online de los adolescentes y verificar qué variables predicen los diversos tipos de usos. A partir de una encuesta representativa aplicada a 397 estudiantes de educación secundaria de la Comunidad de Madrid (España) se examinan las gratificaciones de los usuarios de Internet y su relación con variables relacionadas con características de los adolescentes y del contexto familiar y con el tiempo de exposición online. Entre las conclusiones destacan que un uso diario de Internet más elevado predice el consumo de comunicación y relaciones sociales.

Palabras clave: usos y gratificaciones, Internet, adolescentes, motivos de uso.

1. Introduction

Despite the highly-criticised theoretical simplicity and methodological limitations attributed to them, there is no doubt that typologies of uses and gratifications provide us with an initial reference on which to conduct empirical studies which bring us closer to the uses and reasons for use of communication media. According to Moragas[1], taking this theory into consideration will help us to frame and understand the meanings and objectives of use of these media, as well as to introduce a series of variables that must be taken into account. This article looks deep into the social and personal needs that Internet satisfies and lays down a typology of reasons for use, as well as exploring the main variables that can predict different reasons for use.

First of all, we will present the history and current status of the issue of the Theory of Uses and Gratifications, looking both at its theoretical underpinnings and at the various groupings and classifications of uses and rewards to be found in the literature on the subject. Secondly, and after having explained our work methodology, we will present the results of the factor analysis and the subsequent regression analysis, and, finally, our conclusions.

2. History and current status of the issue

With a psychological basis and a marked individual inclination, the Theory of Uses and Gratifications has a clear guiding principle: different people can use the media for different objectives. Therefore, the choice and the use of media has a specific intention and arises from both personal and social motivations. Communication is characterised by the active nature of its audiences, as well as by social and psychological factors as mediators in communicative behaviour, and with certain media competing with other forms of communication to meet the needs of human beings, given that these media can come to have more influence than certain interpersonal processes.

While many authors have based themselves on this theory, it has been the subject of much criticism: either for offering an individualistic analysis model and for working with concepts (needs, reasons, behaviours) that have been insufficiently defined, or for using questionable research techniques (e.g. relationships between the active audience and the use of self-reported data).

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[1] MORAGAS, Miquel de, *Sociología de la Comunicación de Masas*, vol. 1, G. Gili, Barcelona, 1993.

Two other drawbacks stand out: its inability, as a theory of attention to the media, to predict media exposure, and its positing that people are aware of their deep-rooted reasons for their choices and are always capable of explaining them in any circumstances[2].

After the 1980s, there were attempts to overcome the pronounced psychological aspects of this perspective by introducing some of the principles of semiology. Therefore, the audience was studied not only as regards its relationship to media, but also as regards the processes used by the audience to construct meanings based on media exposure. As summarised by Klaus Bruhn Jensen[3], recent qualitative research indicates that audiences are capable of ascribing their own meaning to communications media and, furthermore, that in the reception process, the media satisfy in some way the audience's legitimate pleasures and interests.

In recent years, there have also been many studies that look at cyberspace from this perspective and which are normally linked to various taxonomies of gratifications. We must mention Mukherji *et al.*[4] (entertainment, interpersonal utility, social interactions, and surveillance), Svennevig[5] (diversion, personal relationships, social relationships, personal identity, surveillance, imagination, stimulation, and mood changing), Eighmey and McCord[6] (personal relevance), Kargaonkar and Wolin[7] (control of information, interactive control, social escapism, social gratification and informational gratification), Papacharissi and Rubin[8] (interpersonal utility, leisure, search for information,

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[2] RUGGIERO, T. E., "Uses and Gratifications Theory in the 21st Century", *Mass Communication & Society*, vol. 3, nº 1, 2000, pp. 3-37. Recovered on September 23, 2011 from http://www4.ncsu.edu/~amgutsch/Ruggiero.pdf

[3] JENSEN, Klaus Bruhn & JANKOWSKI, Nicholas W. (ed.), *Qualitative methodologies for mass communication research*, Routledge, Londres, 1993.

[4] MUKHERJI, Jyotsna, MUKHERJI, Ananda & NICOVICH, Step, "Understanding dependency and use of the Internet: A Uses and Gratifications Perspective", Paper presented to *the American Marketing Association*, Boston, August, 1998.

[5] SVENNEVIG, Michael, "Needs, not needs: researching technological change", *International Journal of Advertising*, nº 19, 2000, pp. 645-663.

[6] EIGHMEY, John & MCCORD, Lola, "Adding value in the information age: uses and gratifications of sites on the World Wide Web", *Journal of Business Research*, vol. 41, nº 3, 1998, pp.187-194.

[7] KARGAONKAR, Pradeep K. & WOLIN, Lori D., "A multivariate analysis of Web usage", *Journal of Advertising Research*, vol. 39, nº 2, 1999, pp. 53-68.

[8] PAPACHARISSI, Zizi & RUBIN, Alan M., "Predictors of Internet use", *Journal of Broadcasting & Electronic Media*, vol. 44, nº 2, 2000, pp. 175-196. Recovered on September 23, 2011 from http://tigger.uic.edu/~zizi/Site/Research_files/PredictorsOfInternetUse.pdf

convenience and entertainment), Kaye and Johnson[9] (interactivity as the factor for most use), Stafford *et al.*[10] (process gratifications, content gratifications and social gratifications) and Song *et al.*[11] (virtual community).

Within the research based around this theory, some studies have focused on gratifications based on the communicational channel used. As regards chats, Mosqueda and García[12] –although their study has a clearly exploratory and qualitative nature– detected, on the one hand, an increase in sociableness through interaction with familiar people or strangers, which allows new relationships to be generated, and, on the other hand, an increase in confidence and self-assurance based on affirming one's own personality, being close to trusted individuals and fostering communicational capabilities. In this respect, it was noted that exposure to gratifications was conscious and self-directed. Fullwood, Sheehan and Nicholls[13], as part of a study of MySpace blogs, found three fundamental motivations for blogging: self-expression, establishing connections through the Internet and managing identity.

As regards social networks, Park, Kerk and Valenzuela[14] found that university students joined groups on Facebook out of their need to socialise with their friends and in a search for status. On the basis of a random Internet survey of university students in Texas (2,603 students), these authors showed how the intensity of Facebook use was strongly related to other gratifications such as feelings of personal satisfaction, confidence and participation in civic life. In the study, it was also noted that although young university students with different economic and socio-demographic backgrounds had participated in

[9] KAYE, Barbara K. & JOHSON, Thomas J., "Online and in the know: Uses and Gratifications of the Web for political Information", *Journal of Broadcasting & Electronic Media*, vol. 46, nº 1, 2002.

[10] STAFFORD, Thomas F. et al., "Determining Uses and Gratifications for the Internet", *Decision Sciences*, 35(2), 2004, pp. 259-288.

[11] SONG, Indeok et al., "Internet gratifications and Internet addiction: on the uses and abuses of new media", *Cyberpsychology & Behavior*, vol. 7, nº 4, 2004, pp. 384-394.

[12] MOSQUEDA RODRÍGUEZ, Paulina & GARCÍA MARTÍNEZ, Verónica, "Rasgos de personalidad y gratificaciones de jóvenes usuarios del chat", *Razón y Palabra*, nº 72, 2010. Recovered on October 21, 2011 from http://www.www.razonypalabra.org.mx/N/N72/Varia_72/10_Mendez_72.pdf

[13] FULLWOOD, Chris, SHEEHAN, Natash & NICHOLLS, Wendy, "Blog function revisited: A content analysis of MySpace", *Blogs CyberPhicrear hipepsychology & Behavior, December*, vol. 12, nº 6, 2009, pp. 685-689.

[14] PARK, Namsu, KEE Kerk F. & VALENZUELA, Sebastian, "Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes", *CyberPsychology & Behavior*, vol. 12, nº 6, 2009, pp. 729-733.

the sample, there were no significant differences as regards the gratification that the respondents found in using Facebook in their civic participation, which strengthened and activated their political commitment.

Remaining on the subject of social networks, in the research conducted by Urista, Dong and Day[15], they observed the following modalities of gratifications: on the one hand, different forms of social gratification (being in contact with friends and family; meeting people with the same interests; establishing social relationships, such as finding a partner; keeping in touch with old friends; and popularity –basically having the greatest number of friends listed) and status. On the other, they observed communicational gratification, which is most clearly seen in the capacity of individuals to manage *their* communication, together with the possibility of getting in contact with new profiles. According to the results of that study, social networks are used to "experience selective, efficient, and immediate contact with others", which generates a high degree of satisfaction, and they provide a continuous manner in which to seek approval from others. They also become producers for new audiences, where people use self-representation continuously and, also continuously, assess the effects of this. On occasion, this develops into addictive behaviour. Other studies along these lines are those of Ross *et al.*[16] and Livingstone[17].

From a wider perspective, Quiroz[18] observed that for younger people, Internet is a relationship technology, a community culture where they can find satisfaction and share their moods from afar. We find a similar vision in Fullwood, Sheehan and Nicholls[19], who believed that bloggers contributed to emotional well-being, especially for those who have difficulties expressing themselves to others in face-to-face interaction –fundamentally, if the

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[15] URISTA, Mark A., DONG, QUIGWEN & DAY, Kenneth Day, "Explaining why young adults use Myspace and Facebook through uses and gratifications theory", *Human Communication*, vol. 12, nº 2, 2009, pp. 215-229. Recovered on September 23, 2011 from http://www.uab.edu/Communicationstudies/humancommunication/07_Urista_final.pdf

[16] ROSS, Craig et al., Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25, 2009, pp. 578-586. Recovered on September 23, 2011 from http://www.uni-graz.at/dips/neubauer/lehre/fm_lll/ROSS%20ET%20AL%20(2009).pdf

[17] LIVINGSTONE, Sonia, "Taking risky opportunities in youthful content creation: teenagers'use of social networking sites for intimacy, privacy and self-expression", *New Media & Society*, vol. 10, nº 3, 2010, pp. 393-411. Recovered on October 15, 2011 from http://eprints.lse.ac.uk/27072

[18] QUIROZ, María Teresa, *La edad de la pantalla. Tecnologías interactivas y jóvenes peruano*, Fondo Editorial de la Universidad de Lima, Lima, 2008.

[19] FULLWOOD, Chris, SHEEHAN, Natash & NICHOLLS, Wendy, *op. cit.*

subject is too personal. Subrahmanyam and Lin[20] also dealt with this aspect, and suggested that adolescents who suffer from limited social resources use Internet and online communication to offset the lack of social contact in their real lives.

In any case, many of these studies reveal an interest in improving the system for classifying uses and gratifications, in terms of proposals that are aimed at introducing amendments to theory. Thus, LaRose and Eastin[21] took the path of analysing a sort of gratification forecast, that is determining which gratifications people expect from cyberspace in the future compared to those they are currently obtaining or have obtained in the past. This work, which was designed in accordance with a cognitive and social vision of media attention, offered a variety of dimensions: novel sensory incentives (gratifications from searches for information), social gratification, activity and personal incentives (contained in the notion of boredom), with special mention of the idea of monetary gratification and status, not included in previous texts. Finally, these authors underlined the correlations between Internet access and self-efficiency as ways of predicting use. They also worked with the concept of self-regulation, or, in other words, they described how individuals monitor their own behaviour, judge in relation to personal and social standards and apply auto-reactive incentives to moderate their behaviour.

Other studies that form part of this perspective have also examined the circumstances which can boost the use of communications media at certain stages in life. Along these lines, Subrahamanyan et al.[22] examined how the members of particular social groups differ in their assessment of the reasons for use and the gratifications that surfing online give them. In particular, the receptiveness and capacity for assimilation attributed to young people and adolescents as regards these technologies has focused attention on the use of

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[20] SUBRAHMANYAM, Kavery & LIN, Gloria, "Adolescents on the net: Internet use an wellbeing", *Adolescence*, vol. 42, nº 168, 2007, pp. 659-677. Recovered September 24, 2011 from http://www.cdmc.ucla.edu/For_Parents_and_Educators_files/adolescentsweb2007.pdf
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[22] SUBRAHAMANYAM, Kavery, et al., "Online and offline social networks: Use of social networking sites by emerging adults", *Journal of Applied Developmental Psychology*, nº 29, 2008, pp. 420-433. Recovered on September 24, 2011 from http://www.cdmc.ucla.edu/KS_Media_biblio_files/kaveri_reich_waechter_espinoza_2008_1.pdf

Internet and especially among these age groups, the so-called net generation[23] or digital natives[24]. In these previous studies, age and gender have been noted as two variables that play a decisive role in the uses that young people and children make of Internet[25]. Specifically, the influence of age can be due both to the degree of development reached with age and to social and cultural aspects that involve the definition of an age group[26].

In accordance with the Theory of Uses and Gratifications, it could be expected that Internet use by adolescents would be consistent with the concerns associated with their development, which include developing their identity, sexual adjustment and establishing intimate relationships with their peers and romantic partners[27] In parallel, it has been asserted that the process of psycho-social maturing which characterises adolescence implies less dependence on the family, school and other institutions and a simultaneous increase in contact with the group of peers[28], who become the references upon which –and with whom– adolescents define an identity that is independent to their parents.

Experts uphold that during this vital state, identity is built up progressively as the biological manifestations of pubescence appear, as transformations are experienced in the body and in behaviour, in addition to living these changes through the perceptions and the ideas of others[29]. This leads us to think that the practice of interaction with others and, more specifically, with one's peer

[23] TAPSCOTT, Don, *Growing up digital. The rise of the net generation*, McGraw Hill, New York, 1998.

[24] PRENSKY, Marc, "Digital natives, digital immigrants", *On the Horizon*, vol. 9, nº 5, pp. 1-6. Recovered on October 19, 2011 from http://www.marcprensky.com/writing/prensky%20-%20digital%20natives,%20digital%20immigrants%20-%20part1.pdf

[25] LIVINGSTONE, Sonia & HELSPER, Ellen Johanna, "Gradations in digital inclusion: children, young people and the digital divide", *New Media and Society*, vol. 9, 2007, pp. 671-696. Recovered on September 23,, 2011 from http://eprints.lse.ac.uk/2768/1/Gradations_in_digital_inclusion_(LSERO).pdf

[26] HELSPER, Ellen Johanna, "Gendered Internet use across generations and life stages", *Communication research*, 2010, vol. 37, nº 3, pp. 503-520.

[27] SUBRAHAMANYAM, Kavery, et al., "Online and offline social networks: Use of social networking sites by emerging adults", *Journal of Applied Developmental Psychology*, nº 29, 2008, pp. 420-433. Recovered on September 24, 2011 from http://www.cdmc.ucla.edu/KS_Media_biblio_files/kaveri_reich_waechter_espinoza_2008_1.pdf

[28] GINER, Salvador, LAMO DE ESPINOSA, Emilio & TORRES, Cristóbal (eds.), *Diccionario de Sociología*, Alianza, Madrid, 1998, pp.12.

[29] LOZANO URBIETA, María Iciar, "Nociones de juventud", *Última Década*, nº 18, Viña del Mar, 2003. Recovered on September 24, 2011 from http://www.insumisos.com/bibliotecanew/Nocion%20de%20juventud.pdf

group and those activities linked to the evolution of the body take on great significance at this stage in life and lead to the use of certain services and applications on Internet. In this way, Livingstone[30] has stressed the importance that adolescents place on how they present themselves and on the growing role played by social networks such as MySpace, Facebook or Bebo in constructing identity and peer relationships.

Initial development of the data from our research has shown us the great use made by adolescents of those channels that allow them to communicate with their peer group, which mostly consists of school friends (87.7%) or friends living far away (79.8%): instant messaging (89.8% use this very often or sometimes) and social networks (86.3%). Although the main reasons for Internet exposure concern accessing musical content (92.6% very often or sometimes) and chatting to friends (86.7%), we also can find a high percentage (60.6%) who access the Internet to search for information about the TV series, actors and singers that form the references for their behaviour (García, 2010). This article goes deep into the social and personal needs that this *mega-medium* satisfies and lays down a typology of reasons for use, as well as exploring the main variables that can predict different reasons for use.

3. Objectives and Method

The purpose of this study is twofold. On the one hand, it seeks to generate a typology of reasons for Internet use among adolescents in the Community of Madrid[31] with the goal of determining the specific aspects of its use by adolescents. On the other, it endeavours to reveal which other variables can influence the different typologies of use. In particular, we are interested in determining whether there is a correlation between the motivations for uses

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[30] LIVINGSTONE, Sonia, "Taking risky opportunities in youthful content creation: teenagers´use of social networking sites for intimacy, privacy and self-expression", *New Media & Society*, vol. 10, nº 3, 2010, pp. 393-411. Recovered on October 15, 2011 from http://eprints. lse.ac.uk/27072

[31] The Autonomous Community of Madrid is one of the seventeen autonomous regions that comprise the Spanish State. Located in the heart of the Iberian peninsula, the region of Madrid comprises just one province and includes the capital of Spain, Madrid. It has an estimated population of 6,389,950 inhabitants (Spanish National Institute of Statistics, 2011), representing 13.8% of the population resident in Spain. The number of school children registered in compulsory secondary education and for the following two-school-year period (Secondary Education and High School) in this region for the 2009-2010 academic year was 323,522 out of a total of 2,227,191 students in the whole of Spain, representing 14.53% of the total.

and for gratifications among adolescents and variables related to characteristics of the adolescents, to the time spent exposed to Internet and to the characteristics of their family environment.

To achieve our aims, we have used as a basis the empirical data from a statistical survey showing adolescents in years 1 to 4 of Spanish Compulsory Secondary Education (for 12-to 16-year-olds) and for the following two school years (High School) in the Autonomous Community of Madrid over the 2008/2009 academic year. In accordance with the foregoing, the approximate age range covered by the study would be between 12 and 17[32].

The survey was carried out as part of the project entitled "Study of uses of Internet among children in the Madrid Autonomous Community. Risks and characteristics", funded by the Autonomous Community of Madrid and the Rey Juan Carlos University in 2009, in which the daily adolescent uses of technologies related with Internet was analysed, paying particular attention to high-risk practices[33]. The study describes an empirical analysis of a descriptive and explanatory nature of the uses and reasons for use of Internet among adolescents, as elements of reference to discover the risks they are exposed to.

The design of the sample followed stratified multi-stage sampling (socioeconomic level of the municipality or statistical area of the city of Madrid, according to data from 2006 provided by the Office of Statistics of the Madrid Community (Oficina de Estadística de la Comunidad de Madrid), and the type of school, state or privately-owned but state-funded) by conglomerations (educational establishments for Compulsory Secondary Education and High School). The size of the sample was calculated on the basis of data taken from the census of schools and students of the Department of Education of the Madrid regional government and was set at four hundred people for a confidence level of 95.5% and a sampling error of $\pm$ 5% for total data, under the supposition of statistical maximum uncertainty (p=q=50%). This figure was increased slightly for the purposes of possible failures to answer, given the tricky subject involved and the self-administered nature of the questionnaires.

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[32] In Spain, all children up to the age of fifteen and 82.3% of those aged sixteen and seventeen are in education, according to the information provided by the Ministerio de Educación y Ciencia (Ministry of Science) for the 2006-2007 academic year. According to data from the Institute of Statistics of the Madrid region (Instituto de Estadística de la Comunidad de Madrid), in 2001-2002 (the latest course on which data was available when the research was being conducted), 88.2% of school-age children in the Madrid region were registered in compulsory secondary education, and 87.1% in non-compulsory secondary education, at state schools and private schools.

[33] The translation of this article has been financed by PROCOTIN.

Finally, a total of 397 valid interviews were obtained from students in the first to fourth years of compulsory secondary education and the first and second years of High School.

In the first phase of the sampling, ten schools were chosen at random within a stratified framework according to the parameters described above. In cases where the schools showed reticence or gave us excessively long time-frames for data collection, these were replaced by other schools with similar characteristics. The units of analysis of the second phase were the classrooms, which were selected in a random manner by proportional allocation according to the educational cycle. All those pupils in the classroom whose parents had signed a document authorising them to participate in the survey took part. This circumstance meant that in the end the distribution of the sample by age groups and gender would differ slightly from the distribution shown of the universe of adolescents of the Autonomous Community of Madrid, and thus it was decided to assign weights with the aim of maintaining the representativeness of the sample. The distribution of the sample can be compared in the attached chart, using different significant variables, with the data of the survey's target population.

Table 1. Distribution of the sample and the population (2007) by age group

AGE	SEX					
	Sample without weight			Total Madrid Region and sample with weight		
	Males	Women	Total	Males	Women	Total
12-14 years-old	54%	47.5%	50.6%	49%	48.8%	48.9%
15-17 years-old	46%	52.5%	49.4%	51%	51.2%	51.1%
Total	48.9%	51.1%	100%	51.2%	48.7%	100%

The field work was carried out over October 2009. With the aim of minimising the impact on normal class work, the survey was conducted through a self-administered questionnaire in the classroom during teaching hours. Filling in the questionnaire took between fifteen and twenty minutes. In this study, a factor analysis of the main components will be applied to the data collected. Factor analysis searches to reduce a set of variables in lower number of unobserved latent variables called factors. For them, this statistical method describe variability among observed correlated variables and create a model as linear combinations of the potential factors. After a hierarchical linear

regression analysis will be done in order to explore the predictive power of diverse variables introduced sequentially.

4. Variables selected for the study

4.1. Reasons for use

The adolescent respondents were asked how often they did a series of activities or their reasons for using Internet. For this purpose, we presented them with a total of twenty-three items that they could respond to by using to a scale of four categories: often, sometimes, rarely or never (coded with values of one to four, consecutively). The proposed items were:

1. "Look for information to do school homework"
2. "When I am bored"
3. "Chat to friends"
4. "Look for new friends"
5. "Flirt"
6. "Talk about my problems and/or ask for advice"
7. "Listen to music"
8. "Watch films or series, online TV"
9. "Download free music files (Emule, Kazaa, Ares...)"
10. "Download free movies (Emule, Kazaa, Ares...)"
11. "Look for information about leisure activities: cinema, concerts, books, shows, weekend activities, etc."
12. "Look for information about TV series, actors or favourite singers, sport, football, Formula 1..."
13. "Look for information about diet/nutrition, food supplements, beauty, fashion"
14. "Look for information about how to take or where to get joints, speed, pills, cocaine and other drugs"
15. "Access sex pages"
16. "Read news in the electronic press"
17. "Shop online"
18. "Sell online"
19. "Access online gambling pages"
20. "Access magazines for young people"
21. "Play games on my own"
22. "Play network games"
23. "Do research about technical aspects of IT or Internet"

4.2. Age of first Internet use

This issue was handled with a closed-end question which included four response items grouping together four age ranges: "3 to 5 years old", "6 to 8 years old", "9 to12 years old" and "over 12 years old".

4.3. Time of use

This variable was measured through the combination of two questions. The first was "How often do you connect to Internet?", with four response options: "every day or nearly every day", "3-4 days a week", " 2 days a week" and "one day a week" (also coded, with values from 1 to 4). The second question referred to the time spent surfing the Internet, discriminating between school days and weekends. The answers were collected in a scale of five categories: "less than 2 hours", "2 to 3 hours", "3 to 5 hours", "6 hours or more" and "I don't connect" (coded as values 1 to 4 consecutively, the last one "I don't connect" being coded as value 0).

4.4. Mastery of technology

In general, other studies have measured this aspect by asking the respondents directly if they considered themselves to be more or less expert in handling Internet or the technology. In the questionnaire, no specific question was included about the issue, although respondents were asked about their ability to dodge the programs and mechanisms that try to control their Internet use. In short, it was deemed that this circumstance acted as a indicator of the respondent's level of ability in handling technology. More specifically, after asking them about their knowledge of the programs and mechanisms around which control the websites they visit, they were asked: "Can you avoid these forms of control?" and they were offered four choices: "Yes, I do it often", "Yes, but I don't do it", "No, but I would like to be able to", "No, and I'm not interested". To be able to carry out the analysis, we have had to transform this categorical variable into a dichotomous variable in which items one and two were assessed to be a "yes" (value 1) and "no" (value 2).

4.5. Family relationships

Differents studies have examined the influence of familiar context on the Internet use of adolescents[34] [35]. Particulary, communicative forms and unsatisfactory familiar relations have been related to intensive and problematic use of the Internet, and more specifically with applications orientated to interaction and communication[36] [37].

Regarding this point, the questionnaire contained a question which tried to investigate the subjective perception that the adolescents had of the type of relationship they had with their parents. Specifically, they were asked to indicate the way in which they rated their relationship with their parents, being able to choose from six possibilities: "Total trust: my parents trust me and I tell them everything that happens to me", "Fairly close: we often talk about issues that worry us", "My parents are very authoritarian and we hardly communicate", "My parents are very authoritarian, but they listen to me", "My parents have no idea what is happening in my life and I think they don't even care" and, lastly, the option "Other" was included.

This question was transformed and recoded to capture two options: close and communicative relationships and authoritarian relationships (items one and two, coded as value 1) and/or with scarce or no communication (items three, four and five, coded as value 0); finally, the "other" option was treated as missing values by the system.

Other variables collected through the questionnaire and which were used in this study were: age (collected as a continuous variable), sex (man=0 and woman=1) and access to Internet from their own bedroom. Finally, the educational level variable, which was originally going to be included in the analysis,

243

[34] DUERAGER, Andrea & LIVINGSTONE, Sonia, *How can parents support children's internet safety?* EU Kids Online, London, 2012. Recovered on August 23, 2012 from http://www2.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20III/Reports/ParentalMediation.pdf

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[36] VIÑAS, Ferrán, JUAN, Jaume, VILLAR, Esperanza, CAPARRÓS, Beatriz, PÉREZ, I. & CORNELLA, Montserrat, "Internet y psicopatología: las nuevas formas de comunicación y su relación con diferentes índices de psicopatología", *Clínica y Salud*, nº 13, 2002, pp. 235-256. Recovered on August 23, 2012 from http://redalyc.uaemex.mx/redalyc/pdf/1806/180618090001.pdf

[37] LAM, Lawrence. T., PENG, Zi-Wen, MAI, Jin-Cheng, & JING, Jing, "Factors associated with Internet addiction among adolescents", *CyberPsychology and Behavior*, 2009, nº 12(5), pp551-555.

was eliminated in the end due to the high correlation with age, which could distort the results of the factor analysis.

4.6. Belonging to a single-parent family

Family structure, and specifically belonging to single parent family, has been linked to the living conditions of the minors. Orgilés and Samper[38] also found that, controlling others variables such as socieconomic level, children of divorced parents have more symptoms of anxiety for separation, more school fear, worse autoesteem and more problems of conduct. Other studies have related autoesteem, loneliness and anxiety with problematic use of the Internet[39]. Further, the problematic use of the Internet has been associated with applications orientated to interaction and.communication[40] or entertainment[41]. This aspect was contained in a question referring to the people that the adolescent usually lived with, which contained two items: "just father (without mother)" and "just mother (without father)", which duly treated enabled us to collect different variables.

5. Results

5.1. Factor analysis

In order to obtain a typology of reasons for use/consumption of Internet among adolescents, the twenty-three items referring to this issue in our survey underwent principal components analysis. This method of extracting principal components factors keeps the maximum information of the variables in

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[38] ORGILÉS, Mireia & SAMPER, Mª Dolores, "El impacto del divorcio en la calidad de vida de los niños de 8 a 12 años de edad en la provincia de Alicante", *Gaceta Sanitaria*, nº 25 (6), 2011, pp. 490-494. Recovered on August 24, 2012 from http://scielo.isciii.es/pdf/gs/v25n6/original7.pdf

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determining the factors. To extract the factors, eigenvalues lower than one were excluded.

As two of the variables selected had a very low score in the correlations with the rest of the variables (under 0.5), we decided to remove them from the model. The variables were: accessing sex pages and looking for information about how to take or where to get drugs (joints, speed, pills, cocaine...).

Finally, the program provided seven factors or dimensions that synthesized the information from these twenty-one items and would explain the 62% variance. The analysis obtained a sampling adjustment of 0.743 (Kaiser-Meyer-Olkin Measure of Sampling Adequacy), with an observed significance level of 0.000 (Barlett´s Test of Sphericity), which indicates that the model of obtained correlations is not due to chance. To improve the interpretation of the results, a varimax rotation of the factors obtained was applied. In this manner, the features that define each of the seven factors obtained could be defined more clearly and interpreted following the criteria of selecting scores of over 0.5. The results are reflected in the following chart.

Table 2. Matrix of rotated components [a]

	Components						
	1	2	3	4	5	6	7
Connecting to flirt	.137	−.027	.751	.133	.190	.026	−.117
Talk about my problems and/or ask for advice	−.046	.119	.654	.038	−.116	.233	.165
Watch films or series, online TV	.527	.388	−.023	.059	.019	.111	.165
Listen to music	.513	.232	.140	−.061	−.085	.292	.135
Download free music files (Emule, Kazaa, Ares...)	.844	.088	.039	.065	.047	.143	.047
Download free movies (Emule, Kazaa, Ares...)	.849	.119	.098	.096	.074	.010	−.078
Look for information about leisure activities: cinema, concerts, books, shows…	.271	.660	-.051	.027	.028	.060	.144
Look for information about TV series, actors or favourite singers, sport, football	.282	.695	.097	−.029	.183	−.001	.034

	Components						
	1	2	3	4	5	6	7
Look for information about diet/nutrition, food supplements, beauty, fashion	.062	.446	.039	-.079	–.315	.348	.214
Shop online	.064	–.014	–.020	.825	.003	–.072	.217
Sell online	.063	.006	.113	.854	.100	–.019	–.123
Read news in the electronic press	.142	.550	.119	.027	.208	–.322	–.062
Access online gambling pages	.018	.279	.137	.561	.131	.071	–.393
Access magazines for young people	–.074	.610	–.003	.166	.076	.309	.066
Chat to friends	.374	.030	.180	–.057	–.026	.657	.043
Play games on my own	.000	.212	–.037	–.006	.822	.075	–.061
Play network games	.055	.051	.090	.147	.823	.051	.117
Do research about technical aspects of IT or Internet	.163	.116	.211	.195	.365	–.122	.645
Look for information to do school homework	.035	.171	–.132	–.108	–.076	.076	.714
Look for new friends	.108	.017	.855	.005	.006	.042	–.081
When I am bored	.122	.088	.117	–.006	.167	.712	–.075
Eigenvalues*	4.12	2.24	1.86	1.31	1.24	1.13	1-01
Variance explained*	19.6	10.7	8.8	6.7	5.9	5.4	4.8

Extraction method: Principal components analysis. Rotation method: Varimax with Kaiser Normalisation.

a) The rotation converged in nine iterations.

*Sum of saturations to square of extraction.

As has been commented above, it was possible to extract several factors from the survey and these are given below:

Factor 1. Audiovisual entertainment. This factor includes the variables "Download free music files" (V.9), "Download free movies" (V. 10), "Listen to music" (V.7) and "Watch films or series, online TV" (V.8),

Factor 2. Search for information. This comprises the items "Look for information about TV series, actors or favourite singers, sport, football, Formula 1..." (V.12), "Look for information about leisure activities: cinema, concerts, books, shows, weekend activities, etc." (V.11), "Read news in the electronic press" (V.16), "Access magazines for young people" (V.20) and "Look for information about diet/nutrition, food supplements, beauty, fashion" (V.13).

Factor 3. Personal relationships. This comprises factor saturations and the questions about the creation or extending of personal networks: "Flirt" (V. 5), "Talk about my problems and/or ask for advice" (V.6) and "Look for new friends" (V. 4).

Factor 4. Economic orientation. This includes variables of an economic nature such as "Sell online" (V.18), "Shop online" (V.17) and "Access online gambling pages" (V.19)

Factor 5. Leisure. This is made up of the items relating to playing, both "Play games on my own" (V.21) and "Play network games" (V.22)

Factor 6. Communication. This factor includes the items "Chat to friends" (V.3) and "When I am bored" (V.2). We can think that communication with their peer group is a vague variable, an activity to which they devote the free time remaining after another series of obligations and planned leisure activities.

Factor 7. Learning. This includes the items "Do research about technical aspects of IT or Internet" (V. 23) and "Look for information to do school homework" (V. 1).

5.2. Regression analysis

Once the twenty-one items of the survey had been condensed into seven factors, with a view to revealing the latent structure of Internet use among adolescents, a hierarchical linear regression analysis was applied in order to discover the variables that could predict the typology of Internet use among adolescents.

Among the variables selected to be included in the model as predictor variables, some variables were chosen that form a initial block linked with the characteristics of the children and their relationship to Internet ($p<0.01$ and $p<0.05$): gender, age, age of first Internet use and mastery of the technology by the children. A second set of variables was also chosen, relating to the time spent exposed to Internet: frequency of use in days, number of hours of use on school days and number of hours of use at the weekend. A third group of variables was linked to aspects of their family environment: access from their own bedroom, relationships with parents and belonging to a single-parent family.

The results obtained were as follows: first of all, for the "audiovisual entertainment" factor, the characteristics of the adolescents and their link to technology would explain 10.6% of the variance (R^2 corrected) and obtained a significance for F equal to 0.000. The introduction of the other two blocks relating to time of use and to the characteristics of family background contributed nothing to the model. However, within the first block, just age and

mastery of the technology by the children were able to predict use of Internet as "audiovisual entertainment", with significance values of t < 0.01 for the first variable and < 0.05 for the second one.

For the second factor, "search for information", the model selected explained 7.3% of the variance (R^2 corrected), with a significance level for F equal to 0.001. Significant variables were sex, age of first Internet use, frequency of weekly use and time spent on use daily.

As regards the factor called "personal relationships", the model selected explained 11.1% of the variance, with a significance level of 0.000. Predictor variables in this case would be sex, time of use per day on school days and family relationships.

Use related to "economic orientation" obtained a model with an explained variance of 11.1% and with a significance level for F of 0.000. Significant variables that predict this are sex, weekly frequency of use, time spent on Internet daily and access from their own bedroom.

The leisure dimension was 25.2% explained, with a significance level for F of 0.000. In this model, the significant variables that predict the model are age, sex, age of first use and use at weekend.

For the sixth factor, referring to "communication" with friends, the model explained 19.6% of the variance, with a significance for F of 0.000. The predictor variables would be sex, age, weekly frequency of use, daily time of use and weekend use.

Finally, Internet use for "learning" did not acquire significance levels for F (0.333) that would allow us to talk of a linear regression model.

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[42] The results were obtained from a sample of 271 valid cases. Those values of the variables that are significant for p<0.05 and p<0.01 have been shown in bold type.

Table 3. Hierarchical linear regression of characteristics of the adolescents, time of use and family characteristics on the types of use of Internet[42]

Variables	Audiovisual entertainment			Search for information			Personal relationships			Economic orientation			Leisure			Communication			Learning		
	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p
(Constant)	3,103		,000	,689		,321	,769		,267	,246		,726	-2,098		,001	,447		,461	-,469		,518
Age	-,207	-,283	,000	-,040	-,051	,440	-,006	-,008	,906	-,051	-,062	,331	,092	,118	,046	,083	,113	,064	,043	,054	,426
Sex	-,018	-,009	,882	-,373	-,187	,004	,386	,190	,003	,301	,146	,022	,731	,367	,000	-,583	-,311	,000	-,197	-,098	,145
Age of first Internet use	,069	,053	,398	,236	,169	,009	-,027	-,019	,758	,136	,094	,135	,199	,143	,013	-,046	-,035	,552	-,060	-,043	,519
Mastery of technology	-,285	-,152	,021	-,135	-,068	,311	,070	,034	,600	,002	,001	,988	-,167	-,084	,163	-,045	-,024	,703	-,214	-,106	,127
Frequency of weekly use: days	-,117	-,097	,126	-,229	-,178	,006	-,163	-,124	,050	,173	,129	,042	,089	,069	,234	-,229	-,189	,002	,113	,087	,196
Time spent on use daily: hours	,032	,032	,655	,239	,219	,003	-,241	-,217	,002	-,326	-,288	,000	,037	,034	,605	-,142	-,139	,040	,092	,083	,266
Time spent on weekend: hours	,009	,010	,882	-,065	-,070	,327	-,072	-,076	,280	,062	,065	,356	-,225	-,244	,000	-,122	-,140	,037	-,020	-,021	,778
Single-parent family	-,210	-,095	,105	,206	,087	,146	-,078	-,032	,578	-,086	-,035	,548	,051	,022	,685	-,011	-,005	,929	-,152	-,063	,304
Family Relationship	,152	,063	,287	-,188	-,073	,229	,307	,117	,049	-,099	-,037	,530	-,102	-,040	,466	,139	,057	,308	-,242	-,093	,139
Access from their own bedroom	,040	,020	,735	,051	,024	,692	,066	,031	,611	-,364	-,167	,006	,071	,034	,540	-,057	-,029	,615	-,121	-,057	,376

6. *Conclusions and discussion*

The first conclusion drawn from the work undertaken refers to the wide variety of dimensions of reasons for using Internet, which is closely linked to the wide range of applications that this includes. In addition to connecting with the network of people we know who contribute to the construction of our individual identities, the digital social network also includes the option of giving us access to information, music, videos, photos exchanges, ideas, and videos and of widening our network under the "the friends of my friends are my friends" model. This broad choice would explain the success of the Internet among adolescents, who would in this way see some of their chief "needs" at this stage in life, such as communication and relationships with their peer group, covered. All of this has fostered the development of a youth culture that is increasingly relegated to the bedroom, in a society in which parents value having their children at home as opposed to the perceived dangers of the "outside world".

In second place, we found that the most determining variables in the uses that adolescents make of the Internet are gender (which relates to using it to search for information, for personal relationships, and for economic activities, leisure and communication) and the time spent surfing online each day (which influences looking for information, personal relationships, economic activities and communication).

In this respect, older adolescents tend to focus their use of Internet towards audiovisual entertainment, while younger adolescents focus, to a greater extent, on games. Female adolescents are prone to surfing to search for information and to communicate with friends, whereas male adolescents tend more to activities involving searching for new relationships, economic activities and games.

We shall now define the profiles of adolescents that predict the use that will be made of each of the dimensions extracted from the factor analysis:

1. Audiovisual entertainment: characteristic of older adolescents with greater technological abilities.
2. Looking for information: the model shows that this is much more common among females, especially those who began to use the Internet at a younger age, who connect more days in a week but who are online for less hours on week days.
3. Personal relationships: Internet access to establish new personal relationships is more likely among males, in particular those who spend more hours on the Internet on week days and with parental relationships that

they themselves rate as authoritarian or mostly uncommunicative/not at all communicative.

4. The use of Internet from an economic angle is greater among males who, although online less days of the week, connect for more hours on school days and do so from their own bedrooms.

5. Leisure: younger male adolescents who began using Internet at younger ages and who surf more at the weekends are those who mostly use it for leisure activities.

6. Finally, using Internet to spend the time chatting with friends is more common among adolescent girls who connect more frequently during the week and for longer on week days and at the weekend.

Those who spend more days online also do so to look for information and to communicate. Those who spend more time surfing each day also do it to search for personal relationships, for economic activities and for communication. Finally, weekend surfers (those who devote more time at weekends to surfing the Internet) are focused towards leisure activities and communication.

Among the variables linked to family environment, only connecting from the adolescent's own bedroom and quality of communication with the family influence Internet use to any degree. Regarding the first point, access from the private space of the adolescent's bedroom predicts access to economic activities: buying and selling and accessing gambling websites. However, we must point out that access from the adolescent's own bedroom is also associated with more time spent surfing the Internet on school days which, as we have already stated, also predicts its use for searching for personal relationships and communicating with friends.

As for the influence of parent-child relationships and communication with their parents, if these are bad quality, then this predicts a use which is oriented towards personal relationships. This seems to suggest that those adolescents whose family relationships are unsatisfactory seek to escape from and compensate for shortcomings in parental communication through closer online interaction with their peer group (Subrahmanyam & Lin, 2007). Numerous studies conducted from the perspective of uses and gratifications have highlighted this use of communications media to overcome certain social deficiencies, which leads to the development of addictions, and they link this directly to the risks associated with Internet use. The approach that we have used in our study implies a conception of the risks that goes beyond this representation of the risk as addiction. However, its positioning within the uses and gratifications perspective implies the assumption of the supposition that people use communications media according to their needs and interests, and that these are defined by their values and culture.

7. Limitations and future research

In our study, we have not included attitudinal variables and those relating to value orientation, which can play an important role in preferences for different types of activities. In addition, the study does not look deep into the combination of the reasons for use, which would give rise to defining different profiles of use. A subsequent study forming part of a national project[43], the field work for which is currently being executed, will investigate this aspect with a broader sample.

Finally, the theory of uses and gratifications can provide us with a suitable theoretical framework to explain how the use of the Internet and social networks can displace the use of other media and Internet services or applications such as blogs, instant messaging, forums, chats and others. In this respect, it could be useful for future studies to compare the motivations for using different media and channels of communication and information among adolescents.

[43] National R&D Project "Analysis of the use and consumption of media and social networks on the Internet among Spanish adolescents. Characteristics and high-risk practices" (CSO2009-09577), Spanish Ministry of Science and Innovation. Secretary of State for Research. Directorate-General for Research and National R&D Plan Management.

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