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María Sánchez Martínez
msanmar.fhum@ceu.es
Professor. Faculty of
Humanities and
Communication Sciences. CEU
San Pablo University. Spain.

Raquel Ibar Alonso
ribar@ceu.es
Professor. Faculty of
Economics and Business. CEU
San Pablo University. Spain.

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Convergence and interaction in the new media: typologies of prosumers among university students

Abstract

Most young people today are digital natives where the use of new media, is issued by the participation in a creative way and with a high degree of interaction. The emergence of tools making it easy without having high digital skills, has led the grown of prosumers. The aim of the paper is the analysis of the different profiles of this typology of users within the Madrid universities and its interest is settle not only to inquire about the convergent use of technology but also if their interests and motivations really focus on the consumption of new media content or if they participate in a creative way through new technologies, establishing new patterns that enhance interactivity and new business models in media.

Keywords
Prosumers, convergence, interactivity, youngers, cluster analysis, factorial analysis

1. Introduction and background

1.1. *Approximation to the concept of prosumers through media convergence*

One of the consequences of digitalisation, whether text, audio, video or images, or across the change of analogical content into a set of binary digits or directly by the digital capture of information, has enabled content to be seen and consumed across different digital devices, bringing about a technological and multiplatform convergence. This has propelled a transition of the mass communication media which ultimately has become integrated into the Internet while in turn converting it into a media container.

This reality is causing a migration of the younger audiences who seek, in the activity offered by the network, the enjoyment that the old media have stopped offering them (Sánchez & Barceló, 2011: 10). Additionally, to this must be added the collaborative and creative attitude that has been generated in users on the emergence of web 2.0

tools. In this respect, as pointed out by Ribes (2007), one of the beauties attributed to the internet is the fact that any user, individual or group, may become a producer and sender, creating and publishing their own website across the 2.0 publication tool.

Thus, convergence has been progressively configured as a deeply complex and multidisciplinary concept that in the field of communication makes reference to numerous different processes just as have been discussed by authors such as McLuhan (1972), Toffler (1980), Negroponte (1995), De Sola Pool (1983), Fidler (1997), Pavlik (2004), Flynn (2000), Castells (2001), Salaverría (2003), Jenkins (2004, 2006), Dennis (2003) and Salaverría, García Avilés and Masip (2008), and that in some cases, come together with the perspective of the media ecology conceived by MacLuhan (1962 and 1964) where he deals with the manner in which the media interact with people generating an ecosystem to understand the environment and where, as maintained by Islas (2009: 27):

> "Convergence alters the relationship between existing technologies, industries, markets, genres and publics [...] and cultural convergence has imposed profound changes in media companies, which, to be able to survive, have had to reconsider the cultural consumption of the media"

In recent times, media convergence has been driven to offer users new forms of consuming content with an interactivity that enables a *one to one*, *one to many* or *many to many* communication where the roles of sender and recipient interchange constantly, as advanced by Marshall McLuhan and Barrington Nevitt (1972), maintaining that digital technology would enable the consumer to simultaneously assume the roles of content producer and consumer. It is precisely within this context where digital content acquires its relevance since its capacity to operate from any device, its quality and its flexibility of consumption and dissemination have caused an increase its demand among users who do not always see that their needs are met (Sánchez & Barceló, 2011: 2).

Muros, Aragón and Bustos (2013) mention that media competence must contribute to developing the personal autonomy of citizens and their social and cultural commitment. This autonomy is organised around dimensions comprising different kinds of knowledge and behaviours: language, technology, reception and audience, production and programming, ideology, values and aesthetics (Aguaded, 2011). Also, like the users, they must develop their media competences and generate interaction between their own messages and those produced by others in an active, participative, fun manner (Ferrés & Piscitelli, 2012: 75-82).

Pro-active, media literate consumers have always been important, but today they have become prescribers thanks to their digital skills and to the fact that the new technologies enable a unique and also exponential interaction, especially across the social media and the web 2.0 tools.

From an economic and market viewpoint, Toffler in his book *The third wave* (1980), argues that consumers are a phenomenon of the industrial era and he defines prosumers as the kind of people who produce some of the goods and services for their own consumption, that is, their own clothing, their own food or repairing their own cars. Obviously all these services can be purchased or acquired on the market from third parties; indeed, this is how most consumers do so since this is the essence of being a consumer, but on the contrary, the essence of being a prosumer lies in preferring to produce one's own goods and services.

According to Kotler (1986), any movement or change is always the result of the emergence of opposed forces, which can be, for example, an increase in unemployment, an increase in the cost of manpower, a desire for high quality goods and services, the development of new technologies that enable users to participate in the design and

personalisation of goods and, of course, the increase in the level of education which leads to the desire for self-fulfilment.

Parallel to these questions, the new digital media have led to the maximum self-fulfilment of users, enabling them to generate text, image and multimedia content. The consequence is: what you want, when you want and where you want, thereby creating a demanding user who communicates across forums, virtual communities, blogs, comments and evaluations and who is able to offer any kind of content, either his own or third party, on platforms such as You Tube or the P2P networks. If what contemporary users are looking for does not exist, they create it.

The opening hypothesis then is to ascertain whether in fact, in the light of these new perspectives, young people have acquired new roles and behaviours, becoming what is known by the acronym of prosumers, that is, producers and consumers. If this is so, how could they be classified so that the media may use these profiles both in their communication strategies and in their business models?

At the same time, this analysis aims to reveal data in regard to how and why they interact with, consume and share content.

1.2. *Young people and digital competence*

Aguaded (2011: 7-8) refers to young people and their relationship with the new media in the following manner:

> "Mobiles, video games, TV the internet and so forth are an innate part of their lives and those of their peers. Ultimately, they need to be educated in the critical use of these media and they need to be accompanied, making them aware of their risks, revealing their creative potentialities, encouraging them to master their languages and discourse because only if they do it in this manner will they be able to live their interactive generation as active subjects, conscious of their reality".

Young university students of today are a generation that has internalised media convergence, that knows how to make use of the different digital devices and media and that has a social conscience that no other generation has known.

Young people born between the 80's and the mid 90's are known as millennials and are described as being impatient, egocentric and intelligent with a thorough academic preparation. Also included in this generation are the digital natives so the use and the knowledge that they have of the new technologies is very high. According to the study done on a world level by Havas Media on young prosumers (EuroRSCG, 2011: 4), in this generation called millennial, 47% of the population between 18 and 25 is considered to be prosumer. The fact is that many of these young people only consume content rather than generating it and they consider that the fact of sharing content created by others is a form of generating new content. For these people, the fact of sharing the information that gets to them or which they access is part of their social commitment because it turns them into influence for their group. This does not mean a social conscience in the strict sense of the word, but rather a group commitment, acquired tacitly, as part of the cooperation and the collaboration involved in the social media since they have to share with the rest of their contacts whatever appears in their profiles, and if we add to this the exponential nature of the social media, their virality markedly increases.

To Erstad (2010: 56-71) there are four significant areas to test the impact of new media, the convergence of devices and the level of digital literacy:

- *A participatory culture:* This term from H. Jenkins (2006) relates to ways of participating and sharing with others. In later years this has become more apparent through

social networking sites as an interconnection between online and offline participation patterns.

– *Information access:* Since the introduction of the World Wide Web, one of the most obvious advantages of digital media is access to information. The possibilities are endless and mark a significant difference from the book age is the easy access to information provided by the Internet. In addition it has created possibilities for everyone to provide and share information online. One example is Wikipedia as a net-based lexicon where everybody can contribute. This, of course, demands more of the user to evaluate the information provided and responsibility in creating content.

– *Communication possibilities:* The development of e-mail, chat, sms, now replaced by whatsapp and online communities has created new conditions for communication and communicative competence as a skill for the 21 century.

– *Content production:* An important change in literacy practices is that everybody potentially can be producers of content that can be shared with large numbers of other users on sites like MySpace and YouTube. Text-production has increased a lot in our culture, and software tools make it easy to edit films, music and so forth, something that has been termed as remixing.

2. Materials and methodology

This study aimed to analyse the perception that Madrid universities have of the communication media, the access they have to the new technologies, the use they make of them and with what assiduity they use them to access the communication media. Information was collected from the Madrid universities, with a team of survey takers who went to all the universities, both public and private, located in the Autonomous Region of Madrid to take the surveys from the students.

The surveys taken were processed with the help of the SPSS program and with the data base obtained, we did a descriptive statistical analysis in order to understand the behaviour of the population observed, an inference analysis to study the error with which the conclusions obtained on the sample could be applied generally to the population under study and we used two techniques of multivariate analysis: Cluster Analysis to determine the profile of the different groups detected within the group of the Madrid universities and a Factor Analysis to create latent variables that reduce the variables observed.

2.1. *Collection of information*

In the first phase qualitative information was collected using different qualitative techniques: focussed interviews with experts and group dynamics and life stories with Madrid university students. The data provided by these techniques and the theoretical reviews done served to compile a survey from which quantitative primary information was obtained on the population under study, which we used to reduce the data collected and to describe the population studied.

The population selected for the study was the university students doing their studies at the universities, public and private, of the Autonomous Region of Madrid. The population size was 241,729 university students, from which a stratified sample was selected with allocation proportional to the number of enrolled students per university. The sample size was 1,057 university students selected randomly, which means a sample error of 3% allowing us to generally apply the results of the analysis to the whole population.

Table 1. Universities in the Community of Madrid and percentage of students in the sample

	Population	%	Sample
TOTAL	**241.729**	**100,00%**	**1.067**
Alcalá de Henares	18.176	7,52%	80
Autónoma de Madrid	25.318	10,47%	112
Carlos III	15.618	6,46%	69
Complutense de Madrid	71.025	29,38%	313
Politécnica de Madrid	35.227	14,57%	155
Rey Juan Carlos	26.083	10,79%	115
Alfonso X El Sabio	10.174	4,21%	45
Antonio de Nebrija	2.550	1,05%	11
Camilo José Cela	8.779	3,63%	39
Europea de Madrid	10.605	4,39%	47
Francisco de Vitoria	3.072	1,27%	14
Pontificia Comillas	6.540	2,71%	29
San Pablo-CEU	8.562	3,54%	38

Source: Instituto Nacional de Estadística. Copyright INE 2012

We selected a personal self-administered questionnaire with 37 questions, which was structured according to the different sections on which we centred our study:

- *Identification:* Age, sex, origin-nationality, studies, University and Faculty-School, level of digital literacy and knowledge of the communication and information technologies, social-economic status, languages, habitual consumption of media, preferences in the use of media (press, radio, television webs, and so forth).

- *Perception of media convergence:* Level of knowledge of the process-phenomenon, examples, and so forth.

- *Content:* Content (fiction, non-fiction, games, reading matter, information search, contact with other people, personal transactions and purchases, application downloads, and so forth) which is accessed by each medium, place, time, duration, and so forth.

- *Technologies:* Use habits of media to access content (types, places, duration, functions allowed, and so forth), personal equipment available (television and radio receivers, type of computer, tablet, smartphone, e-book, internet access, and so forth).

- *Audience participation:* Evaluation of the interrelationship with the media, forms of communication (social networks, e-mail, others, and so forth), habits, duration, associated content or one that favours participation, enjoyment, and so forth.

2.2. *Data analysis*

The 37 questions asked in the questionnaire generated 132 variables, which we analysed using the appropriate statistical techniques.

First, we did a univariate descriptive analysis, cleansed the data and studied the multivariate normal and random behaviour of the variables. Then, we used the most appropriate multivariate analysis techniques for this data base: we did a factor analysis using the principal components method and the Varimax rotation; we also did a Hierarchical Cluster Analysis using Ward's method where we applied three different stopping rules to make the number of groups formed consistent.

3. Analysis and results

The average age of Madrid university students is 22 and of these, 39% interact with the communication media. Of this 39%, almost two thirds (60%) are women and a little over one third (38%), men. 60% of those surveyed were born in Madrid and 7% outside Spain.

3.1. *Latent variables*

The Factor Analysis gave us 9 Factors, which we propose as Latent Variables which summarise 60% of the information obtained from the survey. With this we can relate the interest and capacity of young people to evaluate, generate and create digital content across the different media of the new media. Thus we study the real capacity of Madrid university students as prosumers.

These variables are as follows:

- Factor 1: Interaction with television: This refers to the television medium, more precisely to the interest and the competences of young people to interact across SMS, social networks, telephone calls, creation of their own content and whether they share content of others, recommending it.

- Factor 2: Interest in co-design: Interest in the participation in and creation of content since due to the interactivity of the new media, prosumers should have a high level of interest in taking part in the co-design of the new formats for communication media.

- Factor 3: Consumption of the internet: Time spent on radio consumption and frequency with which they interact with this medium.

- Factor 4: Other interaction with the communication medium: Time spent on own content consumption, that is, time spent on updating blogs, evaluation and comments on digital media or own publication in wikis or other websites.

- Factor 5: Interaction with digital press: Frequency of interaction with the digital press, namely web 2.0, the press, radio and television across the internet.

- Factor 6: Interaction with the radio: Time spent on content consumption across the personal computer.

- Factor 7: Digital competences and skills: Level of knowledge of the different devices.

- Factor 8: Payment for digital content: Disposition to pay to access entertainment, information and other digital content.

- Factor 9: Time spent on Social Media consumption: Time spent on participating in social networks and chats.

3.2. *Profile of groups*

The Cluster Analysis detected the existence of six groups with a different prosumer profile among the Madrid universities. Using the variables indicated above, we can describe the profile of each of these groups, while designating a name to establish their typology.

- *Non-prosumer (Group 1):* They cannot be considered to be within the behaviour of prosumers since they barely comply with any of its characteristics. This group is characterised by not interacting with any communication medium (TV, digital press, radio), having moderate interest in co-design, not consuming the Internet, having minute digital skills, not being prepared to pay for digital content and dedicating little time to Social Media consumption.

- *Mature prosumer (Group 2):* These are the true prosumers described in the different investigations cited above since they comply with all the patterns established to describe the behaviour of prosumers. This group has an immense interest in interacting with all the communication media (TV, digital press, radio) in the pre-established manner, that is, it is not innovative in regard to interacting in a manner other than that raised in the questionnaire. Its interest in co-design is moderate, it consumes a great deal of the Internet,

it has a high level of digital competences and skills, it will agree to pay for digital content and it dedicates a good deal of time to Social Media consumption.

Millennial prosumer (Group 3): This group has a high level of digital competence and they know they have these capacities and skills, but they show little interest in interacting with the television and the radio even though they interact a great deal with the digital press and they are not innovative in regard to interacting in a manner other than that raised in the questionnaire. The group is highly interested in co-design, it consumes a great deal of the Internet, it does not agree with paying for digital content and the time it dedicates to consuming Social Media is moderate.

Teenage prosumer (Group 4): They continue to make use of the new media more immediate to the teenage use pattern. This group has a moderate interest in interacting with all the communication media (TV, digital press, radio) in the pre-established manner, and it is not innovative in regard to interacting in a manner other than that raised in the questionnaire. It has a moderate interest in co-design, it consumes little of the Internet, it barely has digital competences and skills, it does not agree to paying for digital content but it does, however, dedicate a great deal of time on Social Media consumption.

Passive prosumer (Group 5): This group has little interest in interacting with television and the radio, but it does have a moderate interest in interacting with the digital press, and it is not innovative in regard to interacting in a manner other than that raised in the questionnaire. It has no interest in co-design, it consumes quite a lot of the Internet, it has a high level of digital competences and skills, it disagrees with paying for digital content and the time it dedicates to consuming Social Media is moderate.

Proactive prosumer (Group 6): This group is very interested in interacting with television and the digital press while showing a moderate interest in interacting with the radio and it is highly innovative when interacting with all of the digital media in a manner other than that raised in the questionnaire. It is quite interested in co-design, it consumes the Internet moderately, it has a moderate level of digital competences and skills, it agrees with paying for digital content and the time it dedicates to consuming Social Media is moderate.

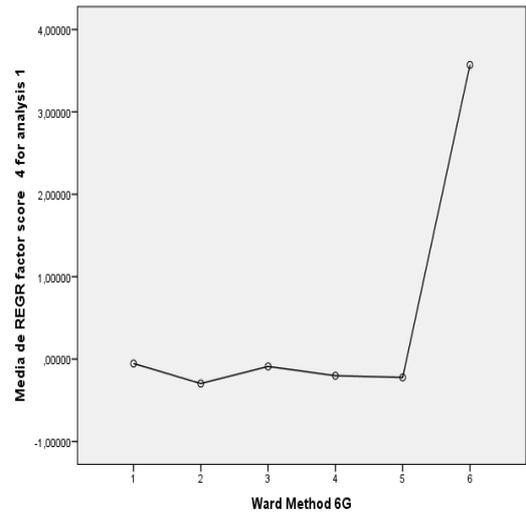The common perception pattern of the Madrid universities is shown in the table below:

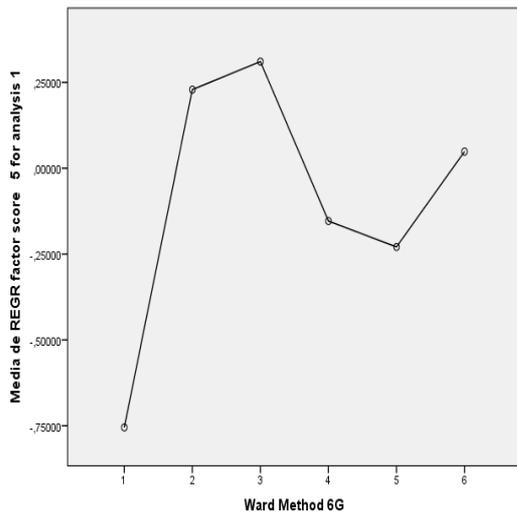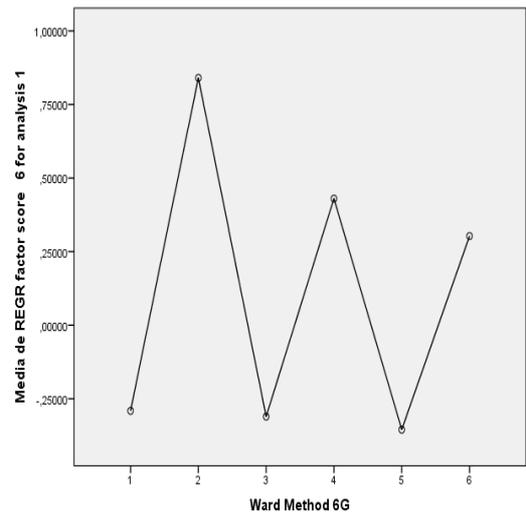**Table 2.** Perception pattern of the Madrid universities from the factor analysis
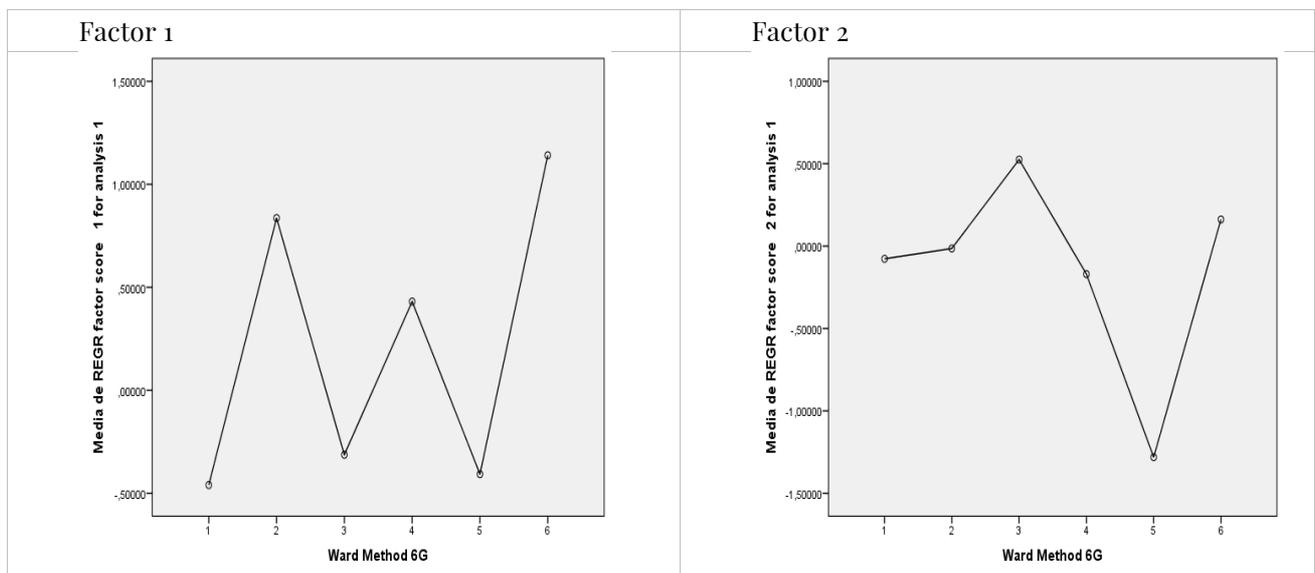
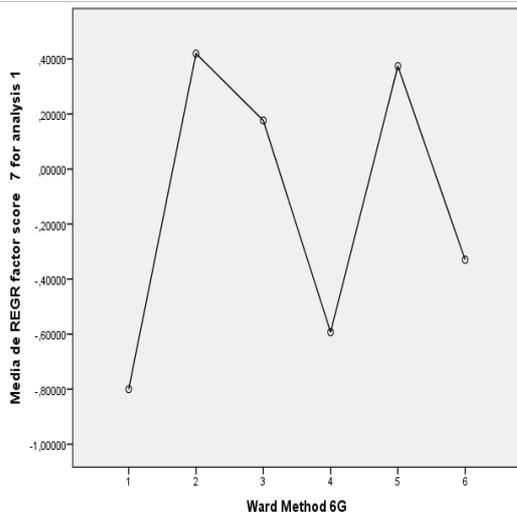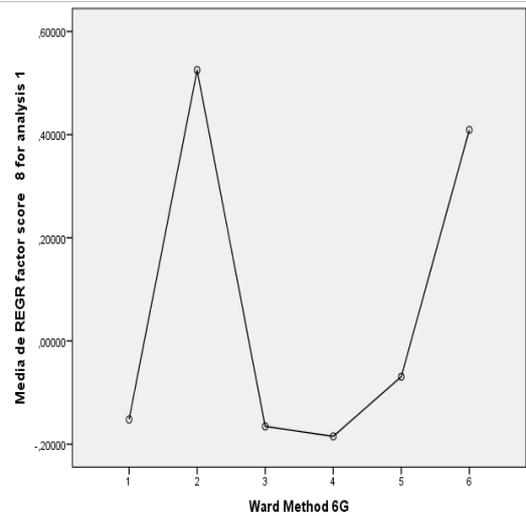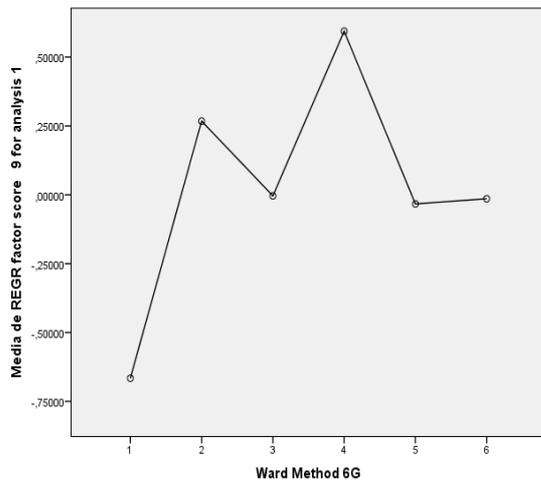Factor 3
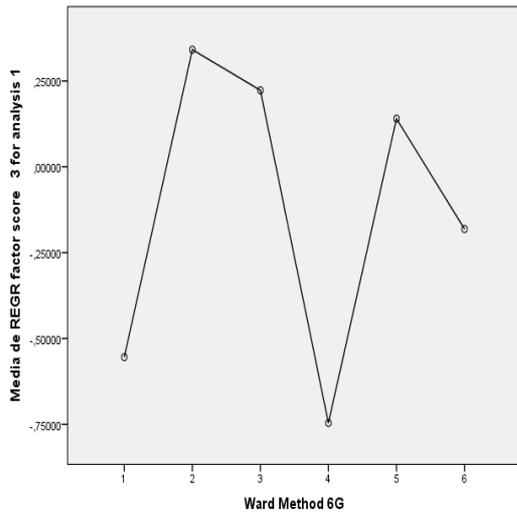
Factor 4

Factor 5

Factor 6

Factor 7

Factor 8

Factor 9

3.3. *General description of the behaviour of prosumers among Madrid universities*

The interpretation of the groups from the factors analysed is reflected in the table below:

Table 3. Interpretation of the groups from the factors analysed

	High values	Media values	Low Values
Group 1		F2	F1, F3, F4, F5, F6, F7, F8, F9
Group 2	F3, F5, F6, F7, F8	F1, F2, F9	F4
Group 3	F3, F5, F7	F2, F9	F1, F4, F6, F8
Group 4	F9	F1, F2, F5, F6	F3, F4, F7, F8
Group 5	F3, F7	F5, F9	F1, F2, F4, F6, F8
Group 6	F1, F4, F8	F2, F3, F5, F6, F7, F9	

The Madrid universities interact little with television, the most usual form being to do so across sms or Premium calls. Although this could be considered to be a passive attitude to the reception of medium content, the fact is that they have an average interest in being able to participate in the creation and design of formats. Therefore, this scant interaction may be due to the lack of opportunities offered today by television to interact with the content. Young people continue to be accustomed to having a passive behaviour toward television since, although there are connected devices and the Hbbtv format is operating, the latter being a hybrid model of broadcasting content on demand via broadband and combined with the conventional service of radio broadcasting, massive access to this technology is not well-established. This means a brake on the development of new business models in television, which may range from the segmentation that can be generated from the data obtained from registered users to the true television a la carte with payment for viewing content, which could help to create quality television with a reduced finance problem in spite of the fragmentation of channels consequent on its digital conversion. If to this we add factors 1 and 8, we can see that, generally speaking, the young people who interact most are also those who are most prepared to pay for viewing.

In its facet of content producers and consumers, it is in the digital press where we find the largest accumulation of groups at high and medium values. This is due primarily to social tools. Sharing news, giving opinions, evaluating them and commenting on them across social networks or writing electronic mails were some of the variables obtained. It is now habitual that in most media and programmes all the tools that the social network has placed at our disposal are available. The profiles on Facebook or Twitter have encouraged the participation of users and the Madrid university students take advantage of this circumstance to create part of the programming content.

Young university students do seem to be familiarised with most of the uses and customs of prosumers in the media, but their interest and frequency, however, is not as much as one might think. From the results obtained, the aspects most developed by the young people under study seem to be more focussed on evaluating and sharing what is published, particularly in the press, than on their own creation of content across blogs, wikis or platforms like You Tube. We observe, however, that it is not a problem deriving from a lack of digital skills, since over one half consider that their skills are high or medium level, and neither is it due to a lack of interest, as there is a medium-level interest in participating in the co-design of programs or formats for the media.

There is little willingness to pay for content; young people have become accustomed to obtaining most of the content they want free of charge. It would be a difficult task to re-educate these groups in the sense that to make media business models more sustainable, sooner or later, something will have to be paid, especially if better quality content is desired. In this respect, it is precisely the groups that most frequently interact with and consume the media are those who are more disposed to pay.

From the results obtained, we can presume that the young university students on one hand use the network as active agents, whereby most interaction occurs in the press medium. In this respect, part of the results obtained are also corroborated by other studies[1] which point to a marked commitment of young people to sharing content across the social media in their facet as prosumers. On the other hand, this interaction seems to arise from the more fun and social aspect of the social networks while the interaction with the media is due more to consumption than a creative interest.

It is also relevant that some groups are situated within the lower values in regard to media consumption and interaction. We would point out that although this may be due to low values in digital skills, bearing in mind that these are university students, their level of education is high. It would be interesting to verify if these are factors due to the quality of the content or the low interest raised by the media among this population.

4. Conclusions

Media convergence has favoured access to multiplatform media, which encourages user participation ubiquitously.

When they are connected to the Internet, young Madrid people use it primarily for online content consumption. With the same frequency for everything relating to the Social Media, 39% say that they interact with the communication media.

Social networks seem to be the object of most interest and consumption among the university student population, in which respect, the mass use of smartphones and content convergence has been essential.

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[1] As occurs in the case of the data provided by the study undertaken by Havas Media y Euro RSCG, *op. cit.*, p. 3, where it is maintained that 47% of young people worldwide are considered to be prosumers. This difference in percentage is due to the fact that the age range of the population of our study corresponds to young university students while that cited was wider.

The Social Media are the most usual form of generating content, therefore, we can say that in regard to Madrid university students, they are prosumers because they generate content for social networks and virtual communities. They are, however, little disposed to generate more original or specific content for blogs, audio-visual platforms or their own websites.

The forms of interaction with the media are those obtained from this study, since the subjects barely use others; young university students go along with what they know. In this respect, the fact that in general they have interest in co-design should be evaluated since it shows a positive disposition to creation and originality that may provide added value to the media. For this reason, the different multimedia groups in Spain should ask themselves the following question: Would it not be more beneficial to provide the necessary tools to younger prosumers so that they can participate? In this manner, instead of obtaining data for mining and subsequent processing, they may generate spaces of interest where the more collaborative prosumers can enrich media content.

In regard to the interactivity that they generate with the media, in most of the group classification, it seems that Madrid university students are more interested in receiving, generating and sharing media content across social networks than directly from the online content of the media.

As a result of this study, we have detected six heterogeneous groups of media prosumers among the Madrid university students, namely non-prosumer, mature prosumer, millennial prosumer, teenage prosumer, passive prosumer and proactive prosumer. Therefore, these groups reveal the relationship that young Madrid university students have with the communication media via six different group profiles, which is why they should be taken into account when establishing the appropriate strategies in regard to business models, communication and content for the new media.

Additionally, consequent on the results obtained, in subsequent investigations where a study of the behaviour of the prosumer might be desired, it would be sufficient to observe in the population under study the variables or factors proposed from the factor analysis of this investigation.

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