Gender differences in online consumption and content production among Italian undergraduate students

di

Arianna Mainardi, PhD Student in Information Society at Department of Sociology and Social Research, Università Milano-Bicocca
a.mainardi1@campus.unimib.it

Andrea Mangiatordi, Research fellow at the Department of Human Sciences for Education, Università Milano-Bicocca
andrea.mangiatordi@unimib.it

Marina Micheli, PhD in Information Society at Department of Sociology and Social Research, Università Milano-Bicocca
m.micheli6@campus.unimib.it

Francesca Scenini, Lecturer at the Department of Languages and Applied Human Sciences, Milano Lingue-Université de Strasbourg
francesca.scenini@gmail.com

Abstract

Gender has now ceased to influence Internet access and frequency of use, especially among youths. However, self-efficacy in digital skills, content production and Internet uses are still associated with gender. For that reason, this article uses data from a survey conducted in a university in Northern Italy to explore if male and female undergraduates differ in their activities of online consumption and content production and whether self-efficacy could explain the differences.

L'appartenenza di genere non influenza più accesso e frequenza d'uso di internet, soprattutto tra i giovani. Tuttavia altri aspetti, come la fiducia nelle proprie competenze digitali, la produzione di contenuti e gli usi, sono ancora correlati al genere. Partendo da tale presupposto, l'articolo analizza un questionario effettuato in un'università del nord Italia ed esamina se gli studenti e le studentesse differiscono negli stili d'uso della rete, sia di consumo che di produzione di contenuti, e se la sicurezza nelle proprie competenze può spiegare le differenze.

Keywords

Gender, digital divide, social media, undergraduate students, self-efficacy

Internet as a gendered technology

In studies on internet and inequalities, the concept of digital divide and the "haves" and "haves not" categorization, has been discarded in favor of a better and more powerful reflection on differences in usage, skills and opportunities (Di Maggio, Hargittai 2004). The same tendency has been confirmed by studies on gender and technology. Even if gender was traditionally considered to be implicated in various forms of inequality on matters of internet access and usage, a dichotomous approach based on "access" or "not access" to the internet was abandoned in favor of a wider and deeper discussion about women attitudes, uses or skills. While previous studies highlighted that women are less likely to use the internet than men are (Ono, Zavodny 2002), the literature is currently focusing on how gender is associated with different ways of using it (Harris 2008). Especially among youths, gender differences in internet access and frequency of use are almost insignificant; however, different styles of use are reported (Van Dijk 2005; Liff, Shepherd 2005; Istat 2012).

Related literature shows that this diversity could be explained with gender related factors such as stereotypes about the relationship between women and technology (Wajcman 2009). Stereotypes contribute to a different socialization to technologies according to gender, resulting in specific consumption patterns (Bimber 2000). There is a general stereotype that computers are "boys' toys" which possibly has social implications: the discourse on technology as a male field compromises its role as an important resource in identity building (Seiter 2003). Stereotypes seem to produce real effects that materialize in education and career choices (Varma 2007).

Stereotypes influenced computer adoption within families since the beginning, resulting in a "gendered use of computers" (Seiter 2003). Early studies on ICT use account that "the computer stereotype had a high gender, class and intellectual standing" (ibid). Technology stereotypes are similarly confirmed by the concept of *geek* culture defined as: "an high-tech sub-cultural milieu often associated with computing" (Varma 2007, p. 359). Terms like *geek* describe a set of idealized male norms such as falling in love with computers, being well-versed in the inner workings of computers, being focused on them to the point of obsession and being antisocial (Margolis, Fisher 2002). The analysis of *geek* culture was also considered as a key to understand the dearth of women in computer science and engineering: a study conducted in the U.S. discovered that women that choose to follow a career in computer science experience a precipitous loss of confidence that leads to alienation, a pervasive sense of not belonging, and even depression (Varma 2007).

An interesting aspect of such a stereotype is that it is assumed as true by women themselves (Turkle 1988). Therefore, in order to better understand online practices and gender differences, empirical investigations should take into account how prejudice shapes women discourses and online practices (Mongili 2009). Women's lower internet self-efficacy perception could be interpreted as an example of how prejudices are ad-

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 40

opted and reproduced by women themselves. The ways in which technological systems and gender are performed seem to have great consequences in girls self-efficacy in relation with internet and technology (Mongili 2009). According to Sartori, women are less confident when it comes to managing technological resources and this is a possible cause of initial disadvantage (Sartori 2008). Hargittai and Shafer supposed that women's lower self-assessment regarding their digital skills may affect significantly the extent of their online behavior and the types of uses (Hargittai, Shafer 2006). The authors conducted an empirical study to compare men and women ability in accomplishing web-based tasks with their skills self-evaluation. Their research points out a clear gender-driven dissimilarity in skills self-perception, but not a corresponding divide in actual skills. Therefore lower self-efficacy does not necessarily mean that girls' skills are weaker than boys' skills. Even though men and women do not differ greatly in their online abilities (Botturi, Bramani, McCusker 2012), digital studies find that women's self-assessed skill is significantly lower than that of men (Hargittai, Shafer 2006).

In the last decade, with the rapid and widespread adoption of internet and digital media, the academic reflection about the ways young women use new technologies has changed. Bury, for example, identifies a new female geek, characterized by a complex negotiation of normative masculine and feminine identities (Bury 2011). Overall, research shows that the women and girls tend to use new technologies more frequently for social purposes through email, chatting facilities and Instant Messaging, while men and boys tend towards an individualistic use, such as information retrieval, or personal entertainment and games (Harris 2008). This difference was also interpreted as men tendency towards being "more technological" while women more "more functional" (Bracciale 2011).

Data and Methodology

Sample

The analyses presented here are based on data collected by the New Media Observatory (Numediabios) of the University Milano-Bicocca, in Northern Italy. The observatory's general mission is to monitor university students "new media habits" through longitudinal studies. The dataset used here is the result of a survey administered between March 2012 and June 2012. It includes detailed information about media consumption practices, internet uses and a closer focus on Web 2.0 services. The data was gathered through online questionnaires before an introductory test that was mandatory for first year students. Additionally, students of two departments that did not use the introductory test were invited to the survey by email.

The final sample is composed by 2.433 students from seven different departments. Approximately half of the sample is composed by students from social studies or humanistic disciplines, while students from scien-

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 41

tific disciplines are only one fifth. Students from our sample are distributed as follow: Education (24,5%), Mathematical, Physical and Natural Sciences (21,9%), Economics (21,4%), Sociology (13,5%), Psychology (8,9%), Law (7,1%) and Medicine (2,7%). According to data published by the University statistical evaluation office the overall students population is biased towards male students: they are 37.8% of the total, while female are 62.2%. In our sample this proportion is similar to the overall gender distribution in the population (28.9% male students and 71.1% female). However, given the highly unbalanced distribution of male and female students, we always consider them as two distinct groups, and we only test hypotheses within such groups.

Techniques and variables

This work is mainly based on cluster analysis, specifically on the *k*-means method. The technique was adopted in order to identify different styles of online consumption and production among students. Later, in the second and third part of the analysis, the styles will be adopted to explore our research questions regarding gender differences in internet use.

We performed two different clusterings. The first was based on variables referring to many different internet activities associated with browsing the web and communicating privately (IM). The second cluster included instead only variables referring to practices of online content production and sharing (UGC). A twofold analysis allowed us to classify the respondents according to their consumption and production styles independently and to compare the profiles developed through each cluster, eventually identifying similar tendencies or correspondences. However, as previously stated, we are aware that the roles of producer and consumer are intermingled: such a phenomenon is commonly explained in the figure of the prosumer.

For the first clustering we chose the variables from the following questions:

- How often (daily, weekly, rarely, almost never, never) do you use email; read online newspapers; use videochat systems (eg. Skype); use text instant messengers; use chatrooms; use e-commerce platforms; download contents; read blogs; watch video from streaming platforms?

- Which of these web platforms do you know and how often (daily, weekly, rarely, almost never, never) do you use it? YouTube; Wikipedia; eBay; Google Maps; Facebook; Twitter; Apple store; Google Apps; Yahoo Answers; Picasa.

The second clustering was conducted to identify different styles of online content production and sharing. It is generated from variables referred to internet activities that specifically implied producing or sharing content

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

online:

- How often (daily, weekly, rarely, almost never, never) do you participate in discussion forums; blog or update a website); publish content online (images, video or text); comment blog posts;

- On which platform have you ever published content? YouTube; Wikipedia; Twitter; Flickr.

- How often (daily, weekly, rarely, never) do you publish on Facebook wall post; Facebook pictures, link, video; Facebook groups?

The analysis is based on a systematic comparison of students' distribution within the clusters according to their gender. In the final section the analysis explored internet self-efficacy: this was obtained through a question in which students had to define their ability to use the internet on a scale from 1 to 10. This variable was then recoded into four modalities according to its quartiles. The final modalities are: not expert (1-5), sufficiently expert (6), expert (7), very expert (8-10).

Findings

In this section we illustrate the outcomes of our analysis of internet consumption (i.e. internet use) and online content production styles. Through cluster analysis, we divided the sample into 4 profiles of internet use/consumption and into 4 profiles of content production. After have outlined the features of each cluster, we are going to examine how gender and self-perceived internet skills relate with the identified groups.

Profiles of internet use/consumption

First of all we can state that there is a positive correlation between the index of consumption (calculated as the mean value of the consumption variables used for the first cluster analysis) and the index of production (the mean of the variables regarding practices on content production used for the second cluster analysis). Such correlation was tested using Spearman's method (rho = 0.59, p-value < 0.001). We define what characterizes each cluster comparing the centroids in each cluster with the mean value of the same variable in the entire sample.

Through the first cluster, based on the variables of internet consumption practices, we identified four distinct groups: "omnivores", "plain users", "sociables" and "web consumers". "Omnivores" and "plain users" correspond to the same percentage of students (27%) (n=650), while "web consumers" are 26% (n=623) and "sociables" 20% (n=483).

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 43

	Frequency	Valid percentage
Sociables	483	**20,1**
Omnivores	649	**27**
Plain users	650	**27**
Web consumers	623	**25,9**
Total	2405	100

Tab. 1. Internet consumption styles within the sample.

We start by describing the two groups that are at the opposite poles regarding intensity of internet use and variety of online activities conducted. We defined "plain users" those students who use the internet less frequently than the others, engage in a small number of activities and visit fewer websites. This group is actually identified with the lower mean value in each online activity, which means that students in this group tend to be less active compared to the others - they use the internet less intensely than their peers.

At the extreme opposite we find the group defined as the "omnivores". They are students who carry out many different online activities with a high frequency. This cluster has values above mean for nearly all internet activities considered for the cluster analysis. It indicates that students in this group are inclined to use many different websites and services, and to do it quite frequently.

The two other groups can be ideally located in a middle area, between "plain" and "omnivore" users: they are "sociables" and "web consumers". Interestingly, these two groups have opposite tendencies.

"Sociables" are heavy users of the most well known social network sites (Facebook and YouTube in particular) and Web 2.0 services (such as Google Apps). The centroids for this group on variables related to social network sites have the highest values, also compared to "omnivores". "Sociable" users seem not particularly interested in online activities which are not related with maintaining social relationships (such as online news). The "web consumers", at the contrary are less enthusiastic about social network sites (they have lower mean values on these variables), but they are frequent news readers, through online newspaper websites or web blogs, and they are more inclined to use e-mail or watch streaming video than "sociables".

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 44

	Sociables	Omnivores	Plain users	Web Consumers	Variable Mean
YouTube	96,48	96,12	83,53	93,13	92,315
Wikipedia	92,42	93,89	79,58	92,46	89,5875
EBay	51,88	58,1	38,82	44,08	48,22
Google Maps	85,53	85,4	68,32	78,49	79,435
Yahoo Answers	64,2	63,39	43,6	51,67	55,715
Facebook	94,31	92,02	85,84	82,42	88,6475
Twitter	43,25	50,5	28,92	36,37	39,76
Apple Store	50,04	49,39	25,83	34,74	40

Google Apps	56,56	53,18	19,13	21,83	37,675
Picasa	51,18	39	17,36	17,37	31,2275
e-mail	76,77	89,44	66,27	80,45	78,2325
Online newspaper	37,05	66,57	22,65	61,92	47,0475
Video call	21,63	51,74	15,18	19,82	27,0925
IM	43,44	80,62	48,02	25,33	49,3525
Chatroom	9,66	20,25	9,95	4,17	11,0075
E- commerce	27,8	36,07	10,92	22,12	24,2275
Reading blogs	31,13	61,15	13,79	38,05	36,03
Download files	65,52	77,59	46	61,04	62,5375
Streaming	53,53	72,06	32,67	58,58	54,21

Tab. 2: Internet consumption profiles.

Profiles of internet use/production

The second cluster allowed us to define different styles of online content production. We compare variables mean values in each group with the mean value of the same variable in the entire sample. Starting from the two opposite groups, we identified "casual producers" and "extended producers": the formers are the less active in all web platforms or web services, while the latters are the most active in all of them. Then there are two intermediate groups: "facebookers" who are inclined to produce content mainly on Facebook and "variegated" who have a more diverse behavior and are particularly active on YouTube (all of them have published a video at least once).

	Frequency	Valid percentage
Facebookers	487	24
Variegated	430	21,2
Extended producers	266	13,1
Casual producers	848	41,8
Total	2031	100
Missing	402	
Total	2433	

Tab 3: Online content production styles within the sample.

	Facebookers	Variegated producers	Extended producers	Casual producers	Total
YouTube production	0	100	59,4	0,24	39,91
Wikipedia production	3,29	11,16	19,92	2,36	9,1825
Facebook wall post	75,58	65,98	65,05	44,59	62,8
Facebook pictures, link, video	64,29	56,88	58,5	34,69	53,59
Facebook groups	70,55	62,41	63,43	39,98	59,0925
Twitter production	0	0	100	0,83	25,2075
Blogging	17,47	17,55	24,14	2,59	15,4375
DIY publishing	52,09	47,12	50,39	18,53	42,0325
Forum participating	20,62	26,44	32,42	7,26	21,685
Flickr production	2,26	3,72	14,29	0,59	5,215
Blog commenting	43,77	38,17	46,35	12,32	35,1525

Tab.4: Online content production profiles.

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 45

Gender and online consumption and production practices

We believe that internet users in the group of the "omnivores" and, at the same time, in the group of the "extended producers" could be labeled as *internet geeks*. The intersection of these groups allow us to identify the most active users: 143 respondents, representing 5.9% of the overall sample. These users tend to consider themselves highly expert (60.8%) or expert (17.5%). Among them there are 67 female (that corresponds to 3.9% of the sample total of female students) and 76 male students (that corresponds to 10.8% of the total of male respondents). Male students seem to be characterized by an higher agency and more likely fall into the *internet geek* description.

To understand more deeply to what extent students online practices are influenced by gender, we compare how female and male students are arranged within each cluster. Given the unequal gender distribution, we split the sample in two sections according to students (self-declared) sex and confront their percentage values within online consumption or production styles (Tab.5, Tab.6).

Results show that the likelihood to fall into a certain style is not the same for male and female students. Differences are especially meaningful for those styles that are set at the opposite poles in the two clusters. Male students are more prone to adopt the styles with the maximum level of engagement, both in consumption ("omnivores") and production ("extended producers"). The gap between male and female in those groups is set to 13 and 12 percentage points. On the other side, female students tend to adopt styles with the lowest level of engagement: 31,5% women are "plain users", while it is the same for only 16% of men. This is also true in terms of online production: women within the "casual producers" group are 11,6% more than men. "Casual producers" (the style with the lowest level of engagement in online content production and sharing) is the most populated group within both genders, but it is even more so among women (44,8%, vs. 34,2%).

These first results seem to reveal that, even if female and male students are both present and active online, gender still influences the way in which the internet is appropriated, leading to different styles of internet use. More precisely, the most intense and variegated styles of internet consumption and content production (according to types and occurrence of online activities) tend to be more common among males, while within the female sample styles characterized by fewer and rarely conducted online actives are more widespread. The outcome of the first analysis could recall the gender gap hypothesis. Nevertheless, we suggest that the relation between gender and styles of internet use is instead more complicated if we look at the larger picture. The other styles of the clusters, the "intermediate" styles, contribute to a more detailed understanding of gender differences. Interestingly, we could identify a pattern in how female and male students are distributed in the remaining groups. Primarily, the styles of internet consumption and online content production that are *socially oriented* are favored by female students. Women are

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 46

more likely than men to be in the "sociable" group (+3%), as far as we are concerned with their internet consumption habits, or in the "facebookers" group (+10%), as far as we are considering their online content production practices. At the contrary, in the remaining groups, the "web consumers" and the "variegated", males outweigh females (29,6% vs. 24,4%; 27.6% vs. 18.6% female).

			Sociables	Omnivores	Plain users	Web Consumers	Total
Gender	Female	% on gender	**21,00%**	23,10%	31,50%	24,40%	100%
	Male	% on gender	17,90%	36,40%	16,00%	**29,60**%	100%
Total		% on gender	20,10%	27,00%	27,00%	25,90%	100%

Tab.5 : Gender distribution within internet consumption styles.

			Facebookers	Variegated producers	Extended producers	Casual producers	Total
Gender	**Female**	% on gender	**26,80**%	18,60%	9,80%	44,80%	100%
	Male	% on gender	16,70%	**27,60**%	21,50%	34,20%	100%
Total		% on gender	24%	21,20%	13,10%	41,80%	100%

Tab. 6: Gender distribution within online content production styles.

Gender and self-efficacy

We move now to the third research question regarding to what extent women lower self-efficacy can explain differences in their styles of using internet.

First of all, students internet self-efficacy is confronted with their sex. Respondents were asked to define on a 1 to 10 scale how experts they perceive themselves in internet related issues. The obtained variable was recoded according to its quartiles in the following manner: not expert (1-5), sufficiently expert (6), expert (7), very expert (8-10). Results indicate that among our sample students internet skills self-evaluation is strongly related with gender (fig. 1). The status of very expert and not-expert is associated with substantial differences between male and female students. Women label themselves as not experts considerably more than men: 45% of female students thinks they are not expert at all, while only 22% of males thinks the same. Only 15% of female students thinks as themselves as very expert in using the internet, while 39% of male students believe to be so.

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI
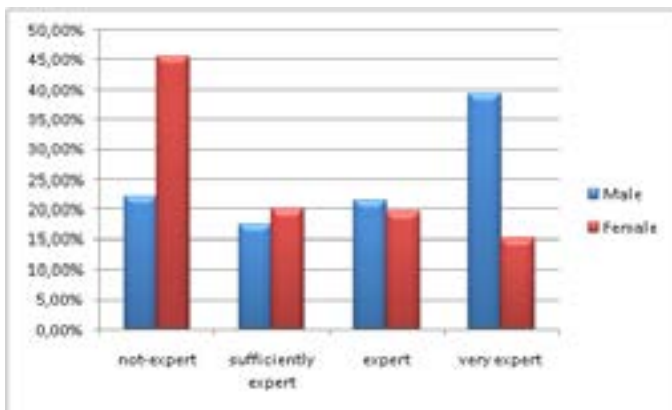
Fig. 1: Self evaluation and gender

Since the sample includes students from different departments, we briefly explore self-evaluation per department. Results show that students' education specialization is related with their internet self-efficacy. Generally, students from "Education" and "Sociology" value their internet skills much lower than their colleagues from "Economics" and "Mathematical, Physical and Natural Sciences". The educational paths mainly chosen by female students - such as Education - come with low levels of self-evaluated internet skills. Conversely, educational careers that are typically scientific associate with greater levels of internet self-efficacy. However, in each department female students label themselves as not experts much more than males, and at the opposite, male students are more present in the "very expert" group. This is consistent with what we previously identified in the whole sample.

To conclude the analysis we explore how internet skills self-evaluation relates with styles of internet use and content production. Overall, students in the "omnivores" group possess higher levels of self-efficacy (Tab.7). Being a "plain user" or a "web consumer", conversely, is related with lower self-efficacy. These results are predictable and hold for both genders. Nevertheless there are some differences. Male students who evaluate themselves as very expert are more likely to be "omnivores" (55,6%) than female students (39,8%). On the other side, 28,1% of very experts women are "sociables", much more than their male counterpart (20,4%). Male students are essentially more inclined to be "omnivores" than girls, and this difference is even more remarkable among high self-efficacy users: surprisingly, the gender gap reach its greater width precisely when students are very experts (in the "omnivore" group).

The second cluster, for online content production and sharing, shows a more diverse gendered and self-efficacy distribution and this makes gender comparison difficult (Tab.8). However, it is possible to identify some analogous tendencies as in the first cluster. The "extended producer" category is the most populated group only among male students that label themselves as very expert. The group is 18 percentage points bigger if we compare experts and very experts male students. Yet, female students do not act as their male colleagues. On the contrary, the "extended produc-

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 48

er" is not the most populated group among very experts female students. Interestingly, while men tend to be less and less present in the "facebook-ers" as their internet self-efficacy increases, women presence remains stable. These results seems to indicate women inclination towards social uses of the internet, notwithstanding their internet self-efficacy.

		Plain	Web consumer	Sociable	Omnivore	Total (100%)
Not expert	Female	42,10%	24,20%	16,80%	16,80%	772
	Male	34,20%	34,20%	16,10%	15,40%	149
Suf. expert	Female	31,20%	22,70%	24,20%	21,90%	343
	Male	15,00%	40,80%	15,80%	28,30%	120
Expert	Female	23,20%	29,20%	22,00%	25,60%	336
	Male	19,60%	35,10%	16,90%	28,40%	148
Very expert	Female	11,30%	20,70%	28,10%	**39,80%**	256
	Male	4,70%	19,30%	20,40%	**55,60%**	275
Total	Female	539	416	359	393	1707
		31,60%	24,40%	21,00%	23,00%	100,00%
Total	Male	111	205	124	252	692
		16,00%	29,60%	17,90%	36,40%	100,00%

Tab. 7: Internet skills self-evaluation, gender and internet consumption styles.

		Casual	Variegated	Facebookers	Extended	Total
Not expert	female	55,00%	14,60%	25,30%	5,10%	644
	male	53,00%	21,40%	19,70%	6,00%	117
Suf. Expert	female	45,40%	20,70%	26,80%	7,10%	295
	male	35,90%	31,10%	19,40%	13,60%	103
Expert	female	35,90%	19,30%	32,90%	11,90%	295
	male	37,30%	30,20%	15,10%	17,50%	230
Very expert	female	26,10%	26,60%	22,90%	24,30%	218
	male	22,20%	27,80%	14,80%	35,20%	230
Total	female	651	270	389	142	1452
		44,80%	18,60%	26,80%	9,80%	
	male	197	159	96	124	576
		34,20%	27,60%	16,70%	21,50%	

Tab. 8: Internet skills self evaluation, gender and online content production styles.

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

Discussion

In our analysis of students "new media habits" we performed two cluster analysis and identified four profiles of internet use and four profiles of online content production. In each cluster analysis we identified a profile representing the maximum intensity of use and extension of activities: they are called "omnivores", for internet use styles, and "extended producers", for online content production or sharing styles. At the extreme

opposite – which means the minimum engagement with the Internet - we have two groups we called "plain users" and "casual producers".

The styles that correspond to a more intense and variegate use of the internet or content production ("omnivores" and "extended producers") are more common in the male sample, while the less elaborated and diversified ("plain" and "casual producers") are more common in the female sample. This first result confirms literature claims on men having a privileged relation with technology and *internet geeks* being mostly male. However, the initial purpose of this study was to explore the role that gender differences play in internet adoption. We found out that is more suitable to analyze the intermediate profiles that represent users for whom certain online practices and web platforms are preferred. While it is true that women conduct fewer online activities and produce or share less contents, this doesn't imply a less intense relationship with internet. In particular, through both our clusters we have identified a group that is strongly defined by online activities conducted for communication and for maintaining social relations. The results show that these styles are preferred by female students. The "sociable" users in fact are 21% among female students and 17.9% among males. In a similar way, we see many women in the "facebookers" group (26.8% versus 16.7% male). The other intermediate profiles ("web consumers" and "variegated producers") are instead preferred by male students. This result is in line with existing researches stating that women online experiences are oriented towards communication (Bracciale 2010; Mazzarella 2005; Harris 2008).

Our analysis also confirms that women tend to have lower internet self-efficacy (Hargittai, Shafer 2006). Within our sample "very expert" women are only 15% while men claiming to be "very expert" are much more (39%). Interestingly, this strong relation between gender and skills self-evaluation doesn't fully explain gender differences in online practices, as we initially presumed. Female students, in fact, adopt styles of internet use based on social communication even when they consider themselves highly skilled in matters of internet use. Differently, among males, higher internet self-efficacy associates with higher agency (more diverse and frequent online activities) falling into the "omnivore" and "extended producer" profiles. As a consequences, among males is more common to act as (what could be defined as) an *internet geek*. Self-efficacy alone is not an exhaustive category to explain gender differences. Instead we suggested to take into consideration how gender is articulated within specific contexts (Mongili 2009).

Ultimately our analysis seems to indicate that there is a difference, instead of a gap or a divide, regarding internet adoption by gender. To grasp the nuances of these differences, we should not focus only on the stereotypical *geek* or the advanced user, but take into serious account other configurations of internet use. In order to achieve this aim, this article analyzed a range of different styles of internet use and focused particularly on the intermediate ones. However, in describing university students internet adoption we conceptualized internet use in a normative way identifying groups set at the opposite poles for their level of engage-

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 50

ment. Our research and next studies on gender differences in internet use should bring into question the mainstream idea of a technological identity expressed merely with a extended and deep engagement with technologies and a passionate relationship to computing.

As final remarks, we would like to note two limitations of our study. Primarily, gender is considered only as an operational dichotomous variable and not in its complexity or performativity: for that purpose a qualitative methodology is more suitable. Secondly, our results should be contextualized: we are commenting on a very specific sample composed by Italian university students from the North of Italy and from specific departments, many of whom in the fields of social studies or humanities.

References

Audiweb, 2012, *Audience Online Report*, <http://www.audiweb.it/cms/view.php?id=6&cms_pk=261261>, [Accessed: 25/01/2013].

Bimber Bruce, 2000, *Measuring the Gender Gap on the Internet*, in "Social Science Quarterly", n. 81(3).

Botturi Luca; Bramani Chiara; McCusker Sean, 2012, *Boys are like Girls: Insights in the Gender Digital Divide in Higher Education in Switzerland and Europe*, in "Journal of Universal Computer Science", n.18(3), pp. 353-376.

Bracciale Roberta, 2010, *Donne nella rete. Disuguaglianze digitali di genere*, Franco Angeli, Milano.

Bury Rhiannon, 2011, *She's Geeky: The Performance of Identity among Women Working in IT*, in "International Journal of Gender, Science and Technology", n. 1(3).

Cavalli Nicola; Ferri Paolo Maria; Mangiatordi Andrea; Scenini Francesca; Pozzali Andrea, 2012, *Dieta mediale degli studenti universitari: primi risultati di una ricerca quantitativa diacronica*, in SCIRES-IT, SCIentific RESearch and Information Technology, Ricerca Scientifica e Tecnologie dell'Informazione, n. 2,(1), pp. 21-42.

Censis, 2011, U.C.S.I., *Nono Rapporto sulla comunicazione. I media personali nell'era digitale*, Franco Angeli, Milano.

DiMaggio, Paul, Hargittai, Eszter, Celeste, Colar & Shafer, Steven, 2004, *Digital Inequality: From Unequal Access to Differentiated Use*, in "Social Inequality", Edited by Kathryn Neckerman. New York, Russell Sage Foundation, 355-400.

Di Maggio Paul, Herigittai Ezster, Celeste Coral, Shafer Steven, 2004, *Digital Inequality: From Unequal Access to Differentiated Use*, in "Social Inequality", New York, Russel Sage Foundation, pp. 355-400.

Eastin, Matthew S.; LaRose Robert, 2000, *Internet Self-Efficacy and the Psychology of the Digital Divide*, in "Journal of Computer-Mediated Communication", n. 6(0).

Faraldi Antonio; Tardito Maur; Vos Marc, 2011, *Fattore Internet - Come Internet sta trasformando l'economia italiana*, The Boston Consulting Group INC, Milano.

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 51

Hargittai Ezster; Shafer Steven, 2006, *Differences un Actual and Perceived online skills: the role of gender*, in "Social Science Quarterly", n. 87(2), pp. 432-438.

Harris Anita, 2008, *Young women, late modern politics, and the participatory possibilities of online cultures*, in "Journal of Youth Studies", n.11(5) , pp. 481 - 495.

Istat, 2012, *I cittadini e le nuove tecnologie*, <http://www.istat.it/it/archivio/78166 http://www.istat.it/it/files/2012/12/cittadini_e_nuovetecnologie.pdf?title=Cittadini+e+nuove+tecnologie+-+20%2Fdic%2F2012+-+Testo+integrale.pdf> , [Accessed: 25/01/2013].

Liff Sonia; Shepherd Adrian, 2005, *An evolving gender digital divide?* in "Internet Issue Brief", n. 2, Oxford Internet Institute <www.oii. ox.ac.uk/resources/publications/IB2all.pdf> , [Accessed: 25/01/2013].

Margolis, Jane and Fisher, Allen, 2002, *Unlocking the Clubhouse: Women in Computing*, MIT Press, Cambridge, MA.

Mascio Antonella, 2008, *Voci di donne nelle comunità virtuali*, in De Maria Cristina; Violi Patrizia (eds), Tecnologie di genere, Bonomia University Press, Bologna.

Mazzarella Sharon R., 2005, *Girl Wide Web*, Peter Lang, New York.

Mongili Alessandro, 2009, *Donne, informatica ed esclusione. Apprendimento dell'informatica e performance di genere*, in "Sardegna. Sociologia@DRES Quaderni di Ricerca", UniCA Eprints, Cagliari.

Ono Hiroshi, Zavodny Madeline, 2003, *Gender and the Internet*, in "Social Science Quarterly", n. 84(1), pp. 111-121.

Ritzer George; Jurgenson Nathan, 2010, *Production, consumption, prosumption*, in "Journal of Consumer Culture", n. 10(1), pp. 13-36.

Sartori Laura, 2008, *Genere, divario digitale e disuguaglianze digitali*, in "Teorie e pratiche di genere nelle ICT", pp. 89 – 100, Bonomia University Press, Bologna.

Seiter Ellen, 2003, *Television and the Internet*, in Jospeh Turuw and Andrea L. Kavanaugh (eds), The Wired Homestead, MIT Press, Cambridge.

Turkle Sherry, 1988, *Computational reticence: Why women fear the intimate machine*, in Kramarae Cheris (ed.), Technology and Women's Voices, Routledge & Kegan Paul, New York.

Van Dijk Jan, 2005, *The Deepening Divide: Inequality in the Information Society*, Sage, Thousand Oaks, CA.

Van Zoonen Liesbet, 2002, *Gendering the Internet: Claims, Controversies and Cultures*, in "European Journal of Communication", n. 17 (1), pp. 5–23.

Varma Roli, 2007,*Women in Computing: The Role of Geek Culture*, in "Science as Culture", n.16 (4), pp. 359-376.

Vigdor Linda, 2011, *A Techno-Passion that is Not One: Rethinking Marginality,Exclusion, and Difference*, in "International Journal of Gender, Science and Technology", n. 1(3).

Wajcman, Judy, 2009, *Feminist Theories of Technology*, in "Cambridge Journal of Economics", n. 34(1), pp. 143–152.

Wilder Gita; Mackie Diane; Cooper Joel, 1985, *Gender and computers: two surveys of computer-related attitudes*, in "College Students. Sex

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 52

Roles", n.13, pp. 215-228.

Williams Sue; Ogletree, Shirley, Woodburn William; Raffeld Paul, 1993, *Gender Roles, Computer Attitudes and Dyadic Computer Interaction Performance*, in "College Students. Sex Roles", n. 29 (7/8), pp. 515-525.

Gender differences in online consumption and content production among Italian undergraduate students

A. MAINARDI
A. MANGIATORDI
M. MICHELI
F. SCENINI

pag. 53