

Carlota Lorenzo-Romero¹, Maria-del-Carmen Alarcon-del-Amo²,
Giacomo Del Chiappa³

PROFILING A LATENT SEGMENTATION OF ITALIAN SOCIAL NETWORKERS

The appearance of Web 2.0 has implied a growth in social interactions between people and organizations. In this context, social networking sites (SNS) are online applications that allow the creation and management of social networks. SNS represent a space where individuals can create and manage their profile and relationships, share information, collaborate in generating contents, among other activities. SNS have experienced high growth in the last few years, caused by important benefits they represent for both individuals and organizations, as it has been explained in this research. 3 types of Italian social networkers through the analysis of latent class conglomerates are shown in this study, based mainly on the level of use of the tools available in SNS, as well as different covariates which determine the personal profile of social networkers in Italy. Conclusions help companies to define and design their communication strategies more efficiently using SNS as a marketing tool.

Keywords: social networking sites; latent segmentation; online questionnaire; Italy.

Карлота Лоренцо-Ромеро, Марія-дель-Кармен Аларкон-дель-Амо,
Жакомо дель Чаппа
ЛАТЕНТНА СЕГМЕНТАЦІЯ ІТАЛІЙСЬКИХ КОРИСТУВАЧІВ
СОЦІАЛЬНИХ МЕРЕЖ

У статті описано, як поява Web 2.0 посприяла росту соціальної взаємодії між людьми та організаціями. У даному контексті особливий інтерес представляють соціальні мережі як майданчики, на яких люди створюють та керують власними профілями, обмінюються інформацією, взаємодіють у процесі створення спільного контенту та беруть участь в інших видах онлайн-діяльності. Стрімке зростання соціальних мереж протягом останнього десятиріччя приносило прибутки як окремим особистостям, так і організаціям. Представлено поділ італійських користувачів соціальних мереж на класи в залежності від інструментів, якими вони користуються онлайн. Висновки дослідження можуть бути корисними компаніям при розробці комунікаційних стратегій та використання соціальних мереж в якості інструменту маркетингу.

Ключові слова: соціальні мережі; латентна сегментація; онлайн-опитування; Італія.

Табл. 2. Літ. 10.

Карлота Лоренцо-Ромеро, Марія-дель-Кармен Аларкон-дель-Амо,
Жакомо дель Чаппа
ЛАТЕНТНАЯ СЕГМЕНТАЦИЯ ИТАЛЬЯНСКИХ ПОЛЬЗОВАТЕЛЕЙ
СОЦИАЛЬНЫХ СЕТЕЙ

В статье описано, как появление Web 2.0 способствовало росту социального взаимодействия между людьми и организациями. В данном контексте особый интерес представляют социальные сети как площадка, на которой люди создают и управляют своим профилем и кругом общения, обмениваются информацией, взаимодействуют в процессе создания совместного контента и участвуют в других видах онлайн-деятельности. Стремительный рост социальных сетей в последнее десятилетие приносит прибыли как отдельным личностям, так и организациям. Представлено деление итальянских пользователей социальных сетей на классы в зависимости от

¹ University of Castilla-La Mancha, Albacete, Spain.

² Universitat Autònoma de Barcelona, Spain.

³ University of Sassari and CRENoS, Italy.

инструментов, которыми они пользуются онлайн. Выводы исследования могут быть полезны компаниям при разработке их коммуникационных стратегий и использовании социальных сетей в качестве маркетингового инструмента.

Ключевые слова: социальные сети; латентная сегментация; онлайн-опрос; Италия.

1. Introduction and literature review

In the view of the multiple functions that social networking sites (SNS) possess, and the boom they are experiencing and which will continue to grow, we have considered it convenient to concentrate on the study of this phenomenon. The main object of this investigation is to study these SNS in depth. Our specific aim is to establish a typology of social networkers based on their participation in these sites and to define their profile, in accordance with social-demographic aspects (gender and age), experience in SNS, participation frequency, weekly time dedicated, profile location, number of contacts, types of contacts maintained, number of SNS in which they have an account and the reasons for using these websites. In order to achieve these objectives, we have developed an investigation focused on identifying the profiles of users familiar with SNS.

SNS users differ in their attitudes to these websites and their behavior while using same. Gregori and Baltar (2013) analyse the efficacy of Web 2.0 resources to study small and medium entrepreneurship firms, to show entrepreneurs' profiles in order to describe the heterogeneity of groups and the quality of response inside them, applying a cluster analysis taking into account demographic characteristics to classify entrepreneurs with heterogeneous attributes. They identified 4 groups according to age, education and gender variables, obtaining that there are not in fact relevant problems associated with technological barriers in operating with online surveys, although the quality of information is higher in questionnaires sent by highly educated young entrepreneurs than that in other groups. Even though the results confirm that there is a propensity to make better use of these technologies in a targeted population, they do not constitute a technological barrier for the rest.

2. Methodology

In order to develop this research, online surveys of social networkers in Italy, aged between 16 and 74 years of age, were carried out. The sample size was 810 records and 582 final cases. We used a non-probabilistic sampling method of quotas to insure that different population subgroups are represented in the sample with an exact proportion to the population studied. Therefore, we have obtained a representative sample of the universal sampling, based on the data published by Italian National Statistic Institute (Istituto Nazionale di Statistica) (2012). This study makes reference to the social and demographic profile of users between 16 and 74 that have connected to Internet in the last 3 months. Therefore, our sample is composed of very similar percentages of sex, age and region of residence.

This information was collected through an online survey during the months of October-November, 2012. The questionnaire was structured based on closed questions, dichotomic and multichotomic, with simple and multichoice answers. The object of this questionnaire was to obtain information on the user level of SNS, experience in these sites, frequency of use, motives for use and social-demographic data.

3. Results

3.1. Measurement of variables

A latent segmentation methodology was used to obtain a classification of Italian social networkers. This type of procedure allows assigning individuals to the segments based on their probability of belonging, breaking with the restrictions of deterministic assignment inherent to the non-hierarchical cluster analysis (Dillon, Kumar, 1994). This methodology assigns individuals to different segments under the supposition that the data stems from a mixture of distribution probabilities (McLachlan, Basford, 1988).

The advantage of latent class models is that they allow the incorporation of variables with different measurement scales (continual, ordinal or nominal). Also, the models incorporate independent variables that affect belonging to latent classes. These exogenous variables are known as covariables or grouping variables (McCutcheon, 1987; Hagenaars, 1993).

The variables we have used as indicators for cluster analysis have been items (e.g., share or upload photos, comment on friends' photos, sent private and public messages, download applications, and so on) that measure the frequency of the activities carried out in an SNS (never, rarely, sometimes or frequently). On the other hand, different social and demographic characteristics (gender and age) were introduced as covariates in order to outline the resulting segments, as well as experience in these sites, frequency of participation, length of time used, profile location, number of contacts, number of SNS in which they have an account and use and motives for using these websites.

3.2. Analysis of latent segmentation

Adjustment of the model was evaluated with the Bayesian information criterion (BIC), which permits identifying the model with the least number of classes that best adjust to the data. The lowest BIC value was considered as the best model indicator. In this case, the best alternative was reflected by means of dividing the sample in 4 different user groups, as the BIC is minimized in this case. The L2 statistics can be interpreted as the indicator of the quantity of the relationship observed between the variables than cannot be explained by a model; the higher the value is the poorer is the model adjustment to the data and even worse are the observed relationships described by the specified model (Vermunt, Magidson, 2005). On the other hand, the p-value is a formal evaluation of the measurement in which the model adjusts itself to the data (the null hypothesis of this test is that the models specified are valid for the population). Therefore, in our case, we have a good adjustment. Also, the entropy statistic and R² are near 1.

Table 1 contains the profiles of each one of the clusters obtained. In the upper part the size and name assigned to the 4 groups is shown.

Table 1. Latent cluster profiles (indicators)

	POTENTIAL USER (Cluster2)	SOCIAL USER (Cluster1)	FOCUSSED USER (Cluster3)	EXPERIENCED- COMMUNICATOR USER (Cluster4)	Wald	p-value	R ²
Size of the clusters	32.77%	36.74%	19.43%	11.06%			
Indicators:							
SHARE OR UPLOAD PHOTOS							

Continuation of Table 1

Never	0.0286	0.0008	0.0034	0.0000	8.47	0.037	0.23
Rarely	0.2831	0.0407	0.0909	0.0004			
Somet imes	0.4512	0.3283	0.3885	0.0592			
Frequently	0.2372	0.6303	0.5171	0.9404			
COMMENT ON FRIENDS' PHOTOS							
Never	0.0197	0.0001	0.0019	0.0000	50.10	97.6e-11	0.30
Rarely	0.2083	0.0095	0.0551	0.0000			
Somet imes	0.5256	0.2075	0.4091	0.0174			
Frequently	0.2463	0.7829	0.5339	0.9826			
COMMENT ON WHAT THE PEOPLE THEY FOLLOW DO /SAY							
Never	0.0562	0.0002	0.0021	0.0000	114.19	1.4e-24	0.34
Rarely	0.2129	0.0071	0.0341	0.0002			
Somet imes	0.5135	0.1811	0.3464	0.0336			
Frequently	0.2173	0.8116	0.6174	0.9662			
BROWSE ACROSS SNS AND THEIR USERS' PROFILE							
Never	0.3664	0.1136	0.2865	0.0066	98.95	2.6e-21	0.26
Rarely	0.4026	0.3035	0.4004	0.0627			
Somet imes	0.1700	0.3115	0.2150	0.2278			
Frequently	0.0609	0.2715	0.0980	0.7029			
UPDATE PROFILE							
Never	0.0298	0.0007	0.0015	0.0000	120.54	5.9e-26	0.34
Rarely	0.4578	0.0700	0.1103	0.0038			
Somet imes	0.4361	0.4343	0.4893	0.1339			
Frequently	0.0763	0.4949	0.3989	0.8622			
SEND PRIVATE MESSAGES							
Never	0.0182	0.0016	0.0016	0.0000	50.53	6.2e-11	0.12
Rarely	0.1089	0.0250	0.0253	0.0003			
Somet imes	0.4217	0.2548	0.2563	0.0328			
Frequently	0.4511	0.7187	0.7168	0.9669			
SEND PUBLIC MESSAGES							
Never	0.0863	0.0020	0.0010	0.0000	103.46	2.8e-22	0.36
Rarely	0.3088	0.0418	0.0280	0.0003			
Somet imes	0.4875	0.3928	0.3402	0.0398			
Frequently	0.1174	0.5635	0.6308	0.9599			
TAG FRIENDS IN PICTURES							
Never	0.1930	0.0108	0.0697	0.0000	65.73	3.5e-14	0.32
Rarely	0.3787	0.1033	0.2691	0.0039			
Somet imes	0.3399	0.4270	0.4577	0.1259			
Frequently	0.0884	0.4589	0.2035	0.8702			
OBTAIN INFORMATION OF INTEREST							
Never	0.1181	0.0441	0.0000	0.0006	70.61	3.2e-15	0.29
Rarely	0.2961	0.1853	0.0005	0.0130			
Somet imes	0.3657	0.3836	0.0319	0.1493			
Frequently	0.2200	0.3869	0.9676	0.8371			
DOWNLOAD APPLICATIONS							
Never	0.4951	0.3150	0.0916	0.0755	66.08	2.9e-14	0.23
Rarely	0.3527	0.3720	0.2757	0.2024			
Somet imes	0.1247	0.2250	0.3685	0.3332			
Frequently	0.0276	0.0880	0.2642	0.3889			
DOWNLOAD GAMES							
Never	0.6824	0.5591	0.5469	0.1938	29.12	2.1e-6	0.15
Rarely	0.2478	0.2966	0.3119	0.2805			
Somet imes	0.0538	0.1002	0.1047	0.2561			
Frequently	0.0161	0.0442	0.0366	0.2695			

Continuation of Table 1

LOOK FOR FRIENDS							
Never	0.1340	0.0420	0.0204	0.0022	74.04	5.8e-16	0.17
Rarely	0.3778	0.2361	0.1638	0.0456			
Sometimes	0.3960	0.4931	0.4901	0.3512			
Frequently	0.0922	0.2287	0.3256	0.6010			
LOOK FOR A JOB							
Never	0.4283	0.3223	0.0535	0.0832	84.69	3.0e-18	0.22
Rarely	0.2872	0.2872	0.1287	0.1634			
Sometimes	0.1980	0.2525	0.3183	0.3302			
Frequently	0.0866	0.1438	0.4996	0.4232			
COMMUNICATE NEWS THEY BELIEVE TO BE OF INTEREST TO ALL							
Never	0.1664	0.0385	0.0003	0.0000	102.37	4.8e-22	0.40
Rarely	0.3393	0.1873	0.0110	0.0002			
Sometimes	0.4264	0.5610	0.2522	0.0341			
Frequently	0.0680	0.2132	0.7365	0.9658			
SHARE STATE OF MIND							
Never	0.3029	0.0061	0.0611	0.0000	63.70	9.5e-14	0.49
Rarely	0.4378	0.0933	0.3142	0.0001			
Sometimes	0.2290	0.4425	0.4785	0.0249			
Frequently	0.0303	0.4581	0.1462	0.9750			
SHARE LINKS OF INTERESTING WEBSITES							
Never	0.0794	0.0039	0.0002	0.0000	95.96	1.1e-20	0.36
Rarely	0.3184	0.0654	0.0115	0.0000			
Sometimes	0.4475	0.3819	0.1928	0.0028			
Frequently	0.1547	0.5488	0.7955	0.9972			
COMMUNICATE IDEAS/ REFLECTIONS							
Never	0.1592	0.0014	0.0029	0.0000	55.26	6.0e-12	0.47
Rarely	0.3912	0.0338	0.0543	0.0000			
Sometimes	0.3852	0.3633	0.4123	0.0033			
Frequently	0.0643	0.6014	0.5305	0.9967			
INFORM ABOUT WHAT THEY ARE DOING AT THE TIME OF WRITING							
Never	0.6362	0.0908	0.1429	0.0013	137.31	1.4e-29	0.48
Rarely	0.3224	0.3771	0.4373	0.0377			
Sometimes	0.0394	0.3772	0.3223	0.2546			
Frequently	0.0020	0.1549	0.0975	0.7064			
INFORM ABOUT BRANDS OR PRODUCTS THEY USE							
Never	0.7584	0.4165	0.2283	0.0231	48.42	1.7e-10	0.39
Rarely	0.2157	0.3827	0.3693	0.1285			
Sometimes	0.0248	0.1717	0.3080	0.4150			
Frequently	0.0011	0.0291	0.0944	0.4334			
COMMENT ON ADS, AND PUBLICITY							
Never	0.7542	0.4724	0.3019	0.0467	14.12	0.0027	0.34
Rarely	0.2092	0.3232	0.3215	0.1498			
Sometimes	0.0333	0.1574	0.2563	0.3575			
Frequently	0.0033	0.0471	0.1202	0.4461			

*Bold indicates the most relative importance between each category in each segment.

Source: Authors.

To complete the composition of the 4 segments created, we have analyzed the profile of the resulting groups according to the information from the covariates included in the model. Table 2 shows the composition of each group based on the descriptive criteria included in the analysis. The contrasts associated with statistic χ^2 conclude that significant differences exist between the segments regarding gender, age, experience in SNS, frequency of participation, time used, location of the profile

in these sites, number of contacts, types of contacts maintained, number of SNS in which the user has an account and is active and the majority of motives that trigger the use of the SNS, except the use of these sites for professional reasons, because the user was invited and looking for a partner or dating.

Table 2. Profile of latent segments (covariates)

DESCRIPTIVE CRITERIA	CATEGORIES	Potential (Cluster 2), %	Social (Cluster 1), %	Focused (Cluster 3), %	Experienced-Communicator (Cluster4), %	x ² value	Sig.
GENDER	Men	39.55	26.34	37.95	37.83	68.602	0.000
	Women	60.45	73.66	62.05	62.17		
AGE	Less than 25	28.82	39.26	13.79	25.58	155.057	0.000
	From 25 to 29	35.93	30.38	43.15	47.76		
	From 30 to 35	13.05	15.26	16.42	12.30		
	From 36 to 45	14.37	11.79	19.59	12.76		
	Over 45	7.83	3.31	7.05	1.59		
EXPERIENCE IN SNS	Less than 1 month	0.52	0	0	0	1919.156	0.000
	Between 1 and 6 months	3.15	1.83	0.04	3.15		
	Between 6 months-1 year	4.10	4.64	7.68	0.91		
	Over 1 year	92.23	93.53	92.28	95.94		
FREQUENCY OF PARTICIPATION IN SNS	At least once a week	2.68	0.42	0	1.56	792.010	0.000
	Several times a week	14.78	3.04	2.91	0		
	At least once a day	38.56	23.25	16.03	8.67		
	Several times a day	43.98	73.29	81.06	89.77		
TIME SNS USED WEEKLY ¹	Less than 1 hour	21.54	5.42	3.44	6.88	252.481	0.000
	Between 1 and 5 hours	44.74	34.69	26.83	23.48		
	Between 6 and 10 hours	20.43	20.79	18.29	18.47		
	Between 11 and 15	9.92	23.05	18.99	16.03		
	More than 15 hours	3.36	16.05	32.46	35.13		
PROFILE LOCALITATION IN THE SNS	Public	12.29	16.51	18.64	22.05	255.545	0.000
	Private and public	25.42	34.57	52.10	39.90		
	Private	55.01	43.46	25.85	35.58		
	Does not know	7.28	5.46	3.41	2.47		
NUMBER OF CONTACTS	Less than 10	0	0.20	0	0.91	2014.478	0.000
	From 10 to 50	4.97	4.97	6.24	6.26		
	From 51 to 100	4.00	14.67	8.38	6.22		
	More than 100	90.41	80.37	84.58	86.61		
NUMBER OF SNS IN WHICH THEY HAVE ACCOUNT AND USE	1	79.32	79.40	35.45	60.29	653.853	0.000
	2	12.72	16.28	28.70	27.21		
	3	4.54	3.28	26.04	10.74		
	More than 3	3.43	1.04	9.82	1.76		
	Entertainment	65.42	79.06	59.25	87.30	115.273	0.000
	Professional interest	27.37	34.83	67.83	41.39	46.928	0.000
	Because was invited	30.36	26.50	18.41	33.59	177.716	0.000

Continuation of Table 2

MOTIVES FOR USING THE SNS ²	Because it is the trend	9.05	10.22	1.12	874	584.844	0.000
	Maintain contact with friends and acquaintances	84.47	92.22	85.67	89.84	397.391	0.000
	Their friends were there	14.83	25.24	5.93	31.16	326.108	0.000
	Keep informed about events, parties, etc.	28.52	34.71	40.99	37.35	99.737	0.000
	Keep informed of comments on new products	13.72	5.75	32.98	23.73	379.887	0.000
	Make new friends	12.04	24.22	17.44	36.58	303.625	0.000
	Make relationships on a professional level	18.96	25.52	66.38	45.45	95.220	0.000
	To have a closer relationship with people with whom they do not have a direct relationship	8.73	19.25	22.02	34.67	348.494	0.000
	Look for partner/Dating	2.12	4.51	2.93	10.89	684.076	0.000

¹ These intervals were estimated by the Latent Gold statistical program due to the variables introduced were numeric (ordinal in intervals).

² Only positive values (yes) have been reflected in the Table.

* Bold indicates the most relative importance of each variable between all the segments.

Source: Authors.

Below, the characteristics of the groups detected are mentioned, and we have listed them from lesser to greater intensity of use of the SNS:

— Potential User (cluster 2). This group covers 32.77% of SNS users, the second group according to the size of clusters. This is the least active, because they never download applications or games, look for a job, inform about what they are doing at the time of writing, inform about brands or products they use, comment on ads, and publicity. Rarely this group browses across SNS and users' profile, updates the profile, tag friends in pictures, shares state of mind, and communicates ideas/reflections. Nevertheless, this group of people can be considered potential users since they show some activity and interaction with SNS.

— Social User (cluster 1). The largest group, representing 36.74% of the population. A versatile user who carries out the majority of social contemplated activities, except more professional ones (look for job, download applications, inform about brands and adds). The majority comment on what the people they follow are saying (81.16%), comment on friends' photos (78.29%), share photos and interesting website links (63.03%), and communicate ideas/reflections (60.14%). In less proportion although frequently, they update their profile (49.49%), send private and public messages (45.89% and 56.35% respectively), tag friends in photos (45.89%), share their state of mind (45.84%), and inform about things that interest them (38.69%).

— Focused User (cluster 3). 19.43% of the population. Once in a while, the majority of people obtain information of interest (96.76% of this group), share links of interesting webs (79.95%), communicate news they believe to be of interest to all (73.65%), send private and public messages (63.08% and 71.68 respectively), comment on what is said or done by the people who send them photos (61,74%). Frequently, although in less proportion of people, they communicate ideas/reflections (53.05%), comment on their friends' photos (51.71% of this group), and look for job (49.96%). They also update their profile, but more unlikely, they tag friends in photos, browse through profiles and download games.

— Experienced-Communicator User (cluster 4). The smallest group, representing 11.06% of Italian SNS users. This is the most active user, in addition to having the greatest probability of carrying out the same activities as the "social user" (e.g. most of 90% of this group shares or upload photos, and comments of friends' photos), and also inform about brands or products they use (44.34% of segment) and comment on ads, and publicity (44.61%), look for job (42.32%), and download applications (rarely games although with more intensively than the rest of groups). In addition, the most outstanding is that a great probability exists of their executing frequently several activities, specifically inform about what they are doing (70.64%), and look for friends (60.10%).

4. Discussion

The advantages or benefits that SNS provide to the people that use them may be of a sociological (Flavian et al., 2007) or psychological nature (Bressler, Grantham, 2000). SNS offer individuals a place to maintain and create relationships, share information, generate contents, participate in social movements, also allow locating individuals based on the characteristics published in their profiles, amongst other applications. SNS have contributed to increasing the number of contacts maintained by individuals, as well as facilitating the strengthening of links between them.

After the analysis of the SNS users in Italy, we have obtained 4 differentiated user segments, which have been classified as "potential user", "social user", "focused user" and "experienced-communicator user". The results indicate that social and demographic characteristics by themselves are not adequate segmentation criteria for this market. More attention should be paid to the criteria related to the SNS use. The study reveals the different behavior of these segments, providing businessmen with important information as a basis for designing strategies of use of SNS as marketing tools.

Each of the user groups obtained uses different SNS applications and with different frequencies, ways, utilities, and motivation to use. "Potential users" use these sites once in a while to communicate with their friends with frequency because they are learning and discovering the advantages of these 2.0 tools. "Social users" use SNS once in a while to maintain contact with their friends (obtaining and giving information about each other). "Focused users" carry out various activities, although some of them focus in special activities such as looking for a job, share links of interest, download applications etc., all of them useful to obtain specific profits for user (i.e. specific information, contact, software, job etc.). Finally, "experienced-communicator users" carry out a greater number of activities and with greater frequency, especially in that related with bidirectional communication with their friends, and specially, they are consider as a prescriptive group for people with less experience in social web (e.g., they inform about brands or products, comment on ads, and publicity etc.).

With respect to this last issue, it is important to mention that the minority of social networkers (i.e. expert-communicator users as minority group obtained) develop activities related to commenting on ads, obtaining information on brands or products they use, within SNS environment. Therefore, a company should offer an added value to users according to their profile, offering them the possibility of carrying out activities they need, and which they carry out with greater or lesser frequency; try to be another "friend" with whom they frequently maintain a relationship (Alarcon-del-Amo et al., 2011). Companies should offer flexible contents adapted to potential and profitable customers in order to increase the size of segment that comment brands and ads to generate a positive viral marketing which improves the visibility of the company.

References:

- Alarcon-del-Amo, M.C., Lorenzo-Romero, C., Gomez-Borja, M.A.* (2011). Clasifying and Profiling Social Networking Site Users: A Latent Segmentation Approach. *Cyberpsychology, Behavior, and Social Networking*, 14(9): 547–553.
- Bressler, S., Grantham, C.* (2000). *Communities of commerce*. New York: McGraw-Hill.
- Dillon, W.R., Kumar, A.* (1994) Latent structure and other mixture models in marketing: An integrative survey and overview. In: R.P. Bagozzi (Ed.). *Advanced methods of marketing research*. Blackwell Business: Cambridge, pp. 259–351.
- Flavian, C., Diaz, V., Lozano, J., Guinaliu, M., Cristobal, E., Gurrea, R., Casalo, L.V.* (2007). La promocion de la Expo 2008: Redes virtuales y sociedad del conocimiento. Documento de trabajo Fundacion Economia Aragonesa.
- Gregori, A., Baltar, F.* (2013). Ready to complete the survey on Facebook. Web 2.0 as a research tool in business studies. *International Journal of Market Research*, 55(1): 131–148.
- Hagenaars, J.A.* (1993). Loglinear models with latent variables. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07–094. Newbury Park, CA: Sage.
- ISTAT-Istituto Nazionale di Statistica (2012). 15th Population and housing census 2011. Available online at: <http://www.istat.it/en/> (accessed 12 December 2012).
- McCutcheon, A.L.* (1987). *Latent Class Analysis*. Newbury Park, CA: Sage Publications.
- McLachlan, G.J., Basford, K.E.* (1988). *Mixture Models: Inference and Applications to Clustering*. Nueva York: Marcel Dekker.
- Vermunt, J.K., Magidson, J.* (2005). *Latent GOLD 4.0 user's guide*. Belmont, Massachusetts: Statistical Innovations Inc.

Стаття надійшла до редакції 13.11.2013.