PUBLIC SPACE IN CITIES AND CYBERSPACE.

Dr. Aspa Gospodini[1], Dimitris Zachos[2]

[1] Professor of Urban Planning & Design, Department of Planning and Regional Development
University of Thessaly, Greece, e-mail: gospod@prd.uth.gr
[2] Planner, MSc, Department of Planning and Regional Development, University of Thessaly,
School of Engineering, zahos.dimitrios@gmx.com

ABSTRACT

This paper explores the concept of <u>public realm</u> in contemporary societies. It examines the main characteristics of respectively the <u>city's public space</u> and <u>cyberspace</u> in terms of everyday functions and needs (communication, social interaction, information, learning, entertainment, consumption) of individuals in postmodern informational societies. It attempts to identify whether internet and online social networks act complementary to the city's public space, or tend to function as a substitute of public urban space. It aims at providing guidelines for planning and design of public urban spaces and the revitalisation of the city's public realm.

The research is based on a questionnaire survey, conducted both electronically via internet and face-to-face in busy public places, and addressed to teenagers and university students 15-24 years old in the city of Volos, Greece. The analysis draws from a sample of 400 questionnaires with a 3,4% error possibility. The research outcome suggests that despite the increasing popularity of social networks in the internet, and the large number of declined public spaces in contemporary cities, certain types of public urban space do successfully meet the needs of teenagers and educated young individuals. The city's public space and the social networks in cyberspace appear to be complementary and paired - not opposing, competing and substituting. More specifically,

(a) Cyberspace works better than the city's public space as far as the need for information is concerned.

(b) Regarding recreation and communication, internet and the social networks act complementary to the city's public space which still prevails.

(c) Investigating the characteristics of popular species of public space in both cities and cyberspace, the analysis points out as critical variables *i) accessibility of space, ii) land-use mix,* and *iii) the variety of activities in space.*

1 INTRODUCTION

Public space is a critical component of the daily life of individuals; and it probably constitutes the most important dimension of cities that urban planning and design attempt to regulate and shape, acting as catalysts in human choices and behaviour. However, the role of public space is continuously changing, constantly adjusting to different social needs and functions. Empirical research shows on the one hand, that public space of cities in developed regions undoubtedly goes through a period of decline and obsolescence. It seems to have become a victim of technological developments, and in particular, of ICTs entailing a kind of isolation of individuals. And this is in great contrast to the historically founded role of public space as the core of social interaction. On the other hand, cyberspace appears to *'behave'* differently; it is a relatively new alternative to the city's public space, but it is becoming a flourishing territory of the individual's public life. This paper attempts to investigate three important questions:

1. What are the causes of decline of public space in contemporary cities? And, what are the risks of further decline which urban planners and designers have to handle?

2. What is the impact of new technologies and more specifically of Internet and online social networks, on the decline public space in contemporary cities? ,

3. How can we achieve revitalization of public space in contemporary cities?

2. The Shifting of Public Sphere – from the city's public space to cyberspace

Public space functioning as an inseparable part of the urban environment, finds itself integrated in a vicious circle, shaping the city and being shaped by urban society (Carmona 2010b). It is the product of social practices granting it a particular meaning, purpose and content. By means of physical and symbolic boundaries, public space provides users with a sense of belonging (Leite et al. 2007), giving meaning and form to collective life, offering the platform for individual and collective expression (Goffman 1963, Sennett 1974, Leite et al. 2007). It is the place of gathering of individuals, of social interaction among them (Voronkova et al. 2010); a place where political discussions, interactions and concerns are expressed (Arendt 1958, Habermas 1989). According to Zukin (1995), the main characteristics of a really *public* space are (a) public - not private - management of space, (b) free accessibility of space without obstacles (physical or optical), (c) use of space by a group of people for a common purpose. However, public space in cities can not always satisfy these criteria since contemporary cities are not always in a position to make public investments for creating really 'public' spaces or regenerate the existing ones in a way to encourage social interaction, social contact and participation. Besides, on the one hand, important processes such as the shaping of public opinion seem nowadays to be an exclusive responsibility of experts (politicians and media), while on the other hand, the prevailing perception of public space in contemporary societies is that of a consumption place (Kefaloyiannis 2003). According to Carmona (2010b), new forms of public space are produced in accordance to this prevailing interpretation of public space, in compatibility with the aim of attracting individuals and social groups economically strong enough to consume. Therefore, there seems to have been a structural shift of public space: social interaction is being substituted by consumption (Kefaloyiannis 2003). In this framework, hybrid urban spaces, characterized by blurred distinction between private and public, have risen in contemporary cities with mature economies (Nissen 2008). Entry permission, fees or other restrictions, filter potential users of public space (Nissen 2008). Public sphere, according to Carey (1995), has been replaced by a *"mass commercial* culture", as a result of forces of privatization and neo-liberalism. It is no more possible to identify space as public only by land ownership criteria (public or private ownership), but by the ways in which space is used (Marcuse 2003). Contemporary tendencies in design and management of public space lead to a rising complex spectrum of hybrid public spaces (Carmona 2010b).

New Technologies appear to act as a new factor reshaping the idea of public space and subsequently of public sphere. New technologies have brought major changes in the individual's daily life. As earlier argued (see Gospodini 2008), first, new developments in ICT's, multimedia and telecommunications provide excessive information to individuals generating a growing flow of events in time, or a kind of 'acceleration of history', and giving rise to *information societies* (see Castells, 1991, 1993, 1998, 2001, and Castells et al. 2006, Young 1993, Rheingold 1994, Graham and Marvin 1996, Mitchell 1995). Second, the increasing use of mobile telecommunications (mobile cells, mobile internet connections), as combined with the development of high-speed transportation means and infrastructure, such as high-speed trains and closed high speed motorways in urban, suburban, and regional networks, offer individuals the possibility to make use of almost all office facilities in terms of communication and work, while travelling. This has resulted in *high mobility* of individuals on all territorial scales - metropolitan, regional, continental, and the rise of the phenomenon of 'time-space compression' characterising the era of *new modernity*. Third, internet and its products, exhibit a rapid increase of users worldwide. This offers the potential of *distance participation* – or electronic access - of individuals in various social activities such as education, work, shopping, banking, recreation, leisure, tourism etc (Gospodini 2008). These

new modes of communication and social participation (e.g., tele-education, tele-working, tele-shopping, tele-banking, etc) tend to blur the limits among social activities which in the past were well distinguished in terms of both time and space. Nowadays, by means of internet products and facilities like e-mail, on line access, teleconference, etc, social activities such as work, education, creativity and leisure may simultaneously occur in the same space. Such spaces are neither home, nor office; they have no clear functional identity; and therefore, they tend to represent 'non-places' (*'non-lieu'*) according to the term introduced by Mark Augé as early as 1992 (Gospodini 2001, 2008, 2009).

Thus, the modes of leisure, communication, and socialization of the individual have altered resulting to transformations of space, as well as new ways we perceive ourselves in space (Gospodini 2001, Gospodini 2008, Gehl 2011, Carmona et al. 2003, Kefaloyiannis 2003). The above major technological developments offer new forms of social interaction, creating a new framework for social relations and spaces in which they can occur. The degree of physical presence of the individual in social activities and interactions is decreasing. The users of internet and digital social networks have a choice between physical, face-to-face contacts in the city's public space and electronic contacts in cyberspace; In other words, there is a choice between spontaneous meetings that may occur during everyday stroll in the city's public spaces and scheduled or/and "exclusive" meetings in cyberspace (Gehl 2011). Here arises the question - which Mitchell (1995) has dealt with and Aurigi et al. (1997) have attempted to analyze – concerning whether the singular dimension of public space is nowadays that of a commercialized space devoted to consumption and leisure whilst social interaction, communication and politics have moved into the private sphere of action. In other words, it is questioned whether cities nowadays act as the fulcrum of communication. Some scholars (see Papacharissi 2002 and Wellman 2002), argue that cyberspace and its facilities are possibly the means for a revival of public sphere. This point of view is grounded on certain special attributes of cyberspace: (a) cyberspace provides a new "territory" where public sphere can be expanded and developed (Han 2007); (b) cyberspace may also enhance public life that is already taking place in the city's public space by acting supportively as a basis for intensifying physical contacts; (c) cyberspace gives a chance of social interaction to people leaving in areas lacking of social activities (Wellman 2002). The idea that cyberspace may expand public sphere, is reinforced by the criteria of Calhoun (1992), as to what constitutes a genuine public sphere. In summary, Calhoun's criteria are (a) the focus of discussions taking place within the public sphere should be of common interest for users, (b) every interested member of society should be able to easily access this inclusive place, (c) the process of communicative action should be based on rational and critical consultation and (d) the consultation itself should be a subject to the standard regulatory model evaluation and judged solely on the validity and logic of communication, rather than the identity of the speaker or a decision made by a judge. On the same line, Stevenson (2007) argues that cyberspace is a territory characterized by freedom and luck of boundaries, an area which not only has a wide impact on western culture, but also is "the fastest growing" territory "in all of world history" (see Werheim 1997). Greinacher (1997) suggests that cyberspace shapes the field where human needs such as work, recreation, social interaction, information, consumption may be met within new forms of societies; it reinforces social responsibility beyond any constraints of physical space. New choices of users to (re)define their individual and public life, makes internet highly attractive and renders cyberspace a 'territory' for both public and private expression – an attribute formerly belonging exclusively to the city's public space (Papacharissi 2002). There has been a shift of the "public sphere" from physical space to what is called "virtual sphere" which according to Papacharissi (2002), consists of several culturally fragmented cyberspheres constituting a common virtual public space". The boundaries between physical and virtual space are confused and characterized by overlapping and transparency, having their qualitative and experiential differences become ever more indistinguishable (Gumpert et al. 2003). A convergence of these two species of public space seems to mainly appear in the fields of social networks and membership in a community (Gumpert et al. 2003). The consideration of

cyberspace as a broad public sphere, providing shelter for the creation and activity of many smaller public spheres, allowing the participation of specific group members of the actually existing society, gives the impression of <u>a space of platforms</u>, enabling participation in common issues (Fraser 1990). However, there are still open questions: What is the relationship between the city's public space and cyberspace? Is their relationship characterized by replacement or mutually-complementation?

3. Classification of Public Space

By 'public space', one usually denotes either the city's public spaces or digital spaces in cyberspace. Regarding the former, three broad categories of space can be distinguished: *public, private* and *hybrid* - semi-public or semi-private. However, a series of subcategories are defined in recent research (see Carmona 2010a): *neglected Space, lost space, 24-hour space, exclusionary space, segregated space, public claimed space, parochial space, invaded space, and spaces that are the results of hyper-management and are defined as: privatized space, consumption space, invented space, scary space* (Carmona 2010a)[1]. A detailed presentation of subcategories of public open space is shown in Fig.1 (see also photos in Figs. 2, 3, 4, 5, 6, 7, 8, 9).
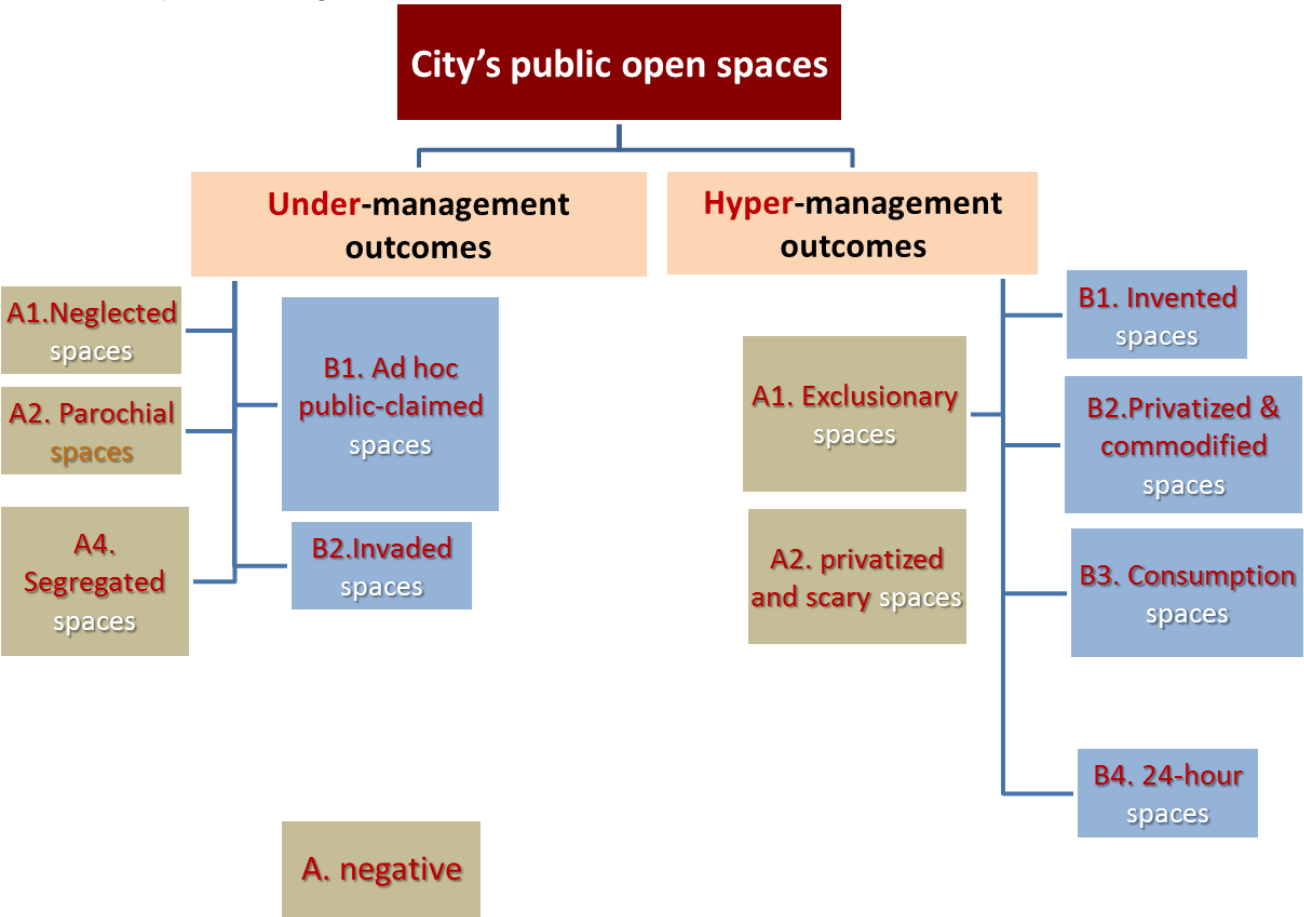
Fig.1: The subcategories of public spaces in contemporary cities.

[1] For more information about the characteristics and description of these places look at Carmona 2010a......

Fig 2. Neglected public open space

Fig. 3. Parochial space

Fig 4. Segregated space

Fig 5. **Ad hoc public-claimed** space

Fig. 6. **Invaded space.** Pedion Areos Park, Athens – an unplanned refugees camp, 2015.

Aerial view of courtyard Steve Rosenthal

Fig. 6**. Exclusionary space.** Gated-communities & fenced gardens

Fig. 7. Privatized and scary spaces. A security guard patrolling along a river bank near a new fenced residential neighbourhood in Taiyuan, China. Photo: Reuters


Fig. 8a, 8b. Privatized & commodified spaces

Fig.9 Consumption public open space

Conceiving of cyberspace as a unified and undifferentiated space does not reflect all differences and particularities exhibited by cyberspace in an analogy to those characterising public spaces in cities. Therefore, cyberspaces should be classified by means of their different individual properties on which our attention should be focused (Whitty et al. 2003). On the basis of empirical investigation, this paper suggests a typology of cyberspace based on the activities of users of cyberspace. Four main categories have been distinguished: i) Communication / Social interaction Spaces, ii) recreation / Leisure Spaces, iii) Information / Media Spaces, iv)i Consumption Spaces, (see graph in Fig.10).

Fig.10. Cyberspace Classification
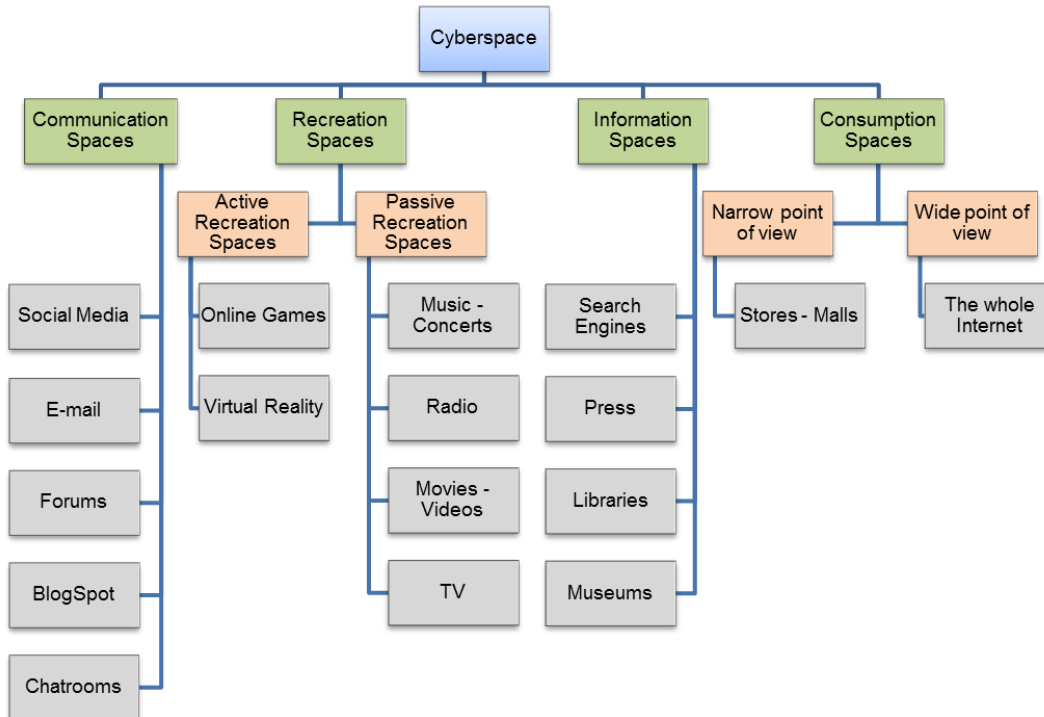
Communication Spaces: Cyberspace has the ability to mimic and substitute sites and places cities and the real world, while setting a framework for social functions. There are clearly distinguishable divisions of cyberspace devoted to the important human need of social interaction - allowing someone to entitle these divisions as '*communication spaces'*. Internet has the ability of providing a social environment which may maintain a «huge extended social network», as well as «differentiated patterns of social interaction» (Morahan-Martin et al. 2003). These attributes are particularly attractive to some users who otherwise would find specifically difficult to consider themselves member of a group (Morahan-Martin et al. 2003). As subcategories of communication spaces are distinguished social media, chatrooms, forums, blogspots, e-mail. All these refer to spaces that promote active involvement of the individual user. At the same time, communication spaces are attractive since they simultaneously allow the passage from individuality to collectiveness. In addition, this category of spaces offer the potential of *'synchronic'* or/and *'a-synchronic'* communication among users, reflect the user preferences for variety, adaptability, flexibility, high interactivity level, and potential of individuals to leave their personal imprint on space. Such characteristics are often lacking from real public space In cities. In contrast to this, communication spaces in cyberspace are constantly changing all levels of human sociality and interactivity, reconfiguring the human condition itself. The types of applications and websites devoted to communication seem countless due to the vastness of the web space and its continuous expansion.

Recreation Spaces are sections of cyberspace devoted to leisure activites such as online games, music, radio, movies, television and videos. Recent research shows that the greater the access to internet, the larger is the increase of leisure activities by users (Whitty et al.

2007). Regarding online recreation, Trew et al. (2004) suggest a distinction between passive and active recreation. The distinction depends upon the degree of interaction between on the one hand the user and on the other hand, the program itself or other users of this program. Therefore, two subcategories of recreational space can be identified: (a) passive recreational spaces and (b) active recreational spaces. The former provides limited interaction level such as online music, radio, movies, television and video. The latter provides high level of interaction such as online games.

Information / Media Spaces: These spaces are either accessed through search engines (e.g. .Google), or they are online newspapers and magazines, electronic libraries and electronic museums. They are constantly growing in number and they facilitate the finding of information by keywords insertion or by moving from one site to another via hyperlinks. Electronic newspapers and online magazines offer free and online information access, while electronic libraries and museums offer access respectively to academic knowledge or/and artefacts – often without special access requirements. This enhances public life and activity. As Finlay (2009) argues, access to information and academic knowledge are critical factors for encouraging people to intervene in public affairs. The continuous expansion and penetration of internet have undoubtedly entailed the creation of an enormous amount of information and data, most of which is freely accessible. Furthermore, the content of information and the available data can be perfectly adapted to the needs and preferences of users (Pan et al. 2006). However, the size of available information is often too large that may prevent the user from studying it (Pan et al. 2006) or it may act as a distraction from the user's original intentions (Miller 2000). According to Maczewski (2002) "*the amount of information that is suddenly available to the user can be described as overwhelming and exciting*".

Consumption Spaces: Divisions of cyberspace, and perhaps cyberspace as a whole, may be conceived as consumption space since it is serving commercial purposes either directly through access or admission fees, or indirectly through commercial advertisements and recurring reports. Cyberspace itself and professional involvement with it, has proven to be a very profitable business. Consumption spaces in cyberspace tend to exceed in number those of real cities – e.g. online (multi-)stores providing goods and services, while the variety of goods and services offered is in some cases larger than those in cities. And all these facilities are in contrast to certain disadvantages of the individual's travelling from a place to another within cities due to long distances, traffic conjunction, cost, and time shortage. The increasing users' preferences for these virtual spaces against real ones constantly contribute to the abandonment and decline of public spaces in cities, as well as the decrease of spontaneous and unscheduled face-to-face contacts.

3 THE RESEARCH METHODOLOGY

The research has been based on questionnaire survey in the city of Volos, Greece. The target population group of the survey was individuals aged 15-24 years old. This population group was selected according to the results of the *Greek Observatory for the Information of Society,* indicating that the majority of internet users in Greece are within age limits of 15 to 24 years old. To increase accuracy, functionality and reliability of the questionnaire and thereby of the research outcome, three pilot studies in individuals of the referenced population were carried out. The questionnaire survey was conducted in two complementary ways:
(a) questionnaire survey via e-mail addressed to technologically skilled and high-educated individuals. The questioned group included students in the University of Thessaly and university degree graduates working in Volos and aged 19 - 24, and
(b) face-to-face questionnaire survey which was addressed to high-school pupils aged 15-18 years old. This group of individuals was encountered in public spaces of the city of Volos.

The main questions of the questionnaire were related to the following:

➢ The daily use of internet (in hours)
➢ The daily use of the city's public spaces (in hours of presence)
➢ The degree of satisfaction of the daily needs respectively by internet and the city's public spaces (ranked to a scale from 1 to 3)[2]
➢ The evaluation of public space, in both the city and cyberspace, in terms of particular variables such as accessibility, attraction, functions accommodated, potential of satisfying every day needs for communication, information and social interaction. (ranked in a scale from 1 to 5)[3]

In order to set the sample of public spaces in the city of Volos, the most important public spaces of the city were first empirically classified in terms of accessibility, land-uses and activities, density of use and degree of popularity (see Table 1 and map in Fig. 11). Then, the sample was composed by public spaces of various types with different spatial and social characteristics, (see Table 1).

In order to calculate the necessary size of the sample of questionnaires, an error of 3.4% and a confidence interval of 95% were chosen and the minimum possible sample was estimated up to 393 questionnaires. The research took the form of stratified sampling; it lasted two weeks starting at 05/19/2012. During this period, 400 questionnaires were made. About 62% of the questionnaire sample corresponds to females, while the remaining 38% to males. 82% of the sample involves individuals aged 19 to 24 years, and the remaining 18% individuals aged 15 to18. Regarding employment, 77% of the sample corresponds to high-educated individuals - most of them students of the University of Thessaly, 16% pupils of high school, 5% university graduate employees and finally, 2% unemployed university graduates.

Collected data were statistically processed and reformed with "IBM SPSS Statistics 20" and "Microsoft Excel 2010". In the process of data verification, mean values, coefficient of variation (var), standard deviation (stand. dev), coverage of variability (cov), and the mean interval (x) of variables valued on a three or five point-scale, were all calculated using the tools of descriptive statistics.

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[2] where 1= minimum or none at all, 2=low, 3=high
[3] 1= minimum or none at all, 2=low , 3=medium , 4=high , 5=very high

Table 1. Classification of public paces in the city of Volos

	Categories of Public Space	Public Spaces
Empirical Categorization	**Neglected public spaces**	1. The building of the central Train Station and the park next to it. 2. *Matsagos'* leisure hall for young people organized by squatters at *Matsagos' old Tabacco Warestore* in the city centre 3. *'Pedion Areos'* Park neighbouring the city's new Harbour and the university campus
In terms of accessibility, land-uses and activities, density of use, degree of popularity	**'Lost' public spaces** (wasted & unused spaces)	1. The Pier for Passengers at the old Harbour in the city centre – functioning nowadays as municipal car parking. 2. The *'University Square'*, an undesigned public open space in the city centre lacking of activities and spatial organisation 3. The *'Freedom Square'* – the largest square in the city centre
	24-hour lively public spaces	1. The central waterfront pedestrian area – *'Argonafton' Street* with café, bars, restaurants, 2. The network of pedestrian streets at *'Aghios Nikolaos'* area with café, bars, restaurants,
	Parochial public spaces (not modern, declined)	1. *'Rigas Feraios'* Park surrounding the Town Hall. 2. The central Train Station and the park next to it.
	Segregated public space	1. The building of the Archeological Museum and the park surrounding it. 2. *'Anavros'* Park
	Spaces of **public claim**	Central waterfront pedestrian area, Aghios Nikolaos network of pedestrian streets, Loulis' Flour mills, Tsalapata multiplex
	Exclusionary	1. The campus of University of Thessaly at Pedion Areos (open spaces, coffee bar, main entrance hall of buildings),
	Consumption public spaces	1. The *'Old City'* leisure centre with miltiplex cinemas, ' 2. The mall at *Loulis' old flour mills* in the historical core of the city
	Invented public spaces	1. The *'Old City'* leisure centre, 2. The Mall at *''Loulis' old flour mills'* 3. *'Tsalapata'* industrial museum in the historical core of the city
	'Closed' **public spaces** (entry restrictions, tickets, regulations, etc)	1. The Archeological Museum, 2. The campus of University of Thessaly at Pedion Areos, 3. *Matsagos'* leisure hall 4. The mall at *'Loulis' old flour mills'*, 5. The *'Old City'* leisure centre
	'Open' **public spaces** (no entry restrictions)	1. The *'University Square'*, 2. The *'Freedom Square'* 3. *'Anavros'* Park, 4. *'Agios Konstantinos'* Park, 5. The Pier for Passengers at the old Harbour in the city centre 6. *'Rigas Feraios'* Park , 7. *'Pedion Areos'* Park
	'Semi-open' **public spaces (** indirectly obliged to be a client of the café, bars, restaurants)	1. The campus of University of Thessaly at Pedion Areos 2. The network of pedestrian streets at *'Aghios Nikolaos'* area 3. The *'Old City'* leisure centre, 4. The Mall at *''Loulis' old flour mills'* 5. *Tsalapata'* industrial museum in the historical core of the city

The campus of University of Thessaly at Pedion Areos

'Tsalapata', multiplex - industrial museum at the historical core of the city

The 'Old city' mall

The 'Loulis' old flourmills' leisure centre with multiplex cinemas

The central train station, 'Rigas Feraios' Park and their surounding area

The 'University Square'

Matsagos' leisure hall for young people organized by squatters

The *'Freedom Square'* – the largest square in the city centre

Aghios Nikolaos network of pedestrian streets

The Pier for Passengers at the old Harbour in the city centre

The central waterfront pedestrian area

Agios Konstantinos' Park

'Anavros' Park

The Archeological Museum and the park surrounding it
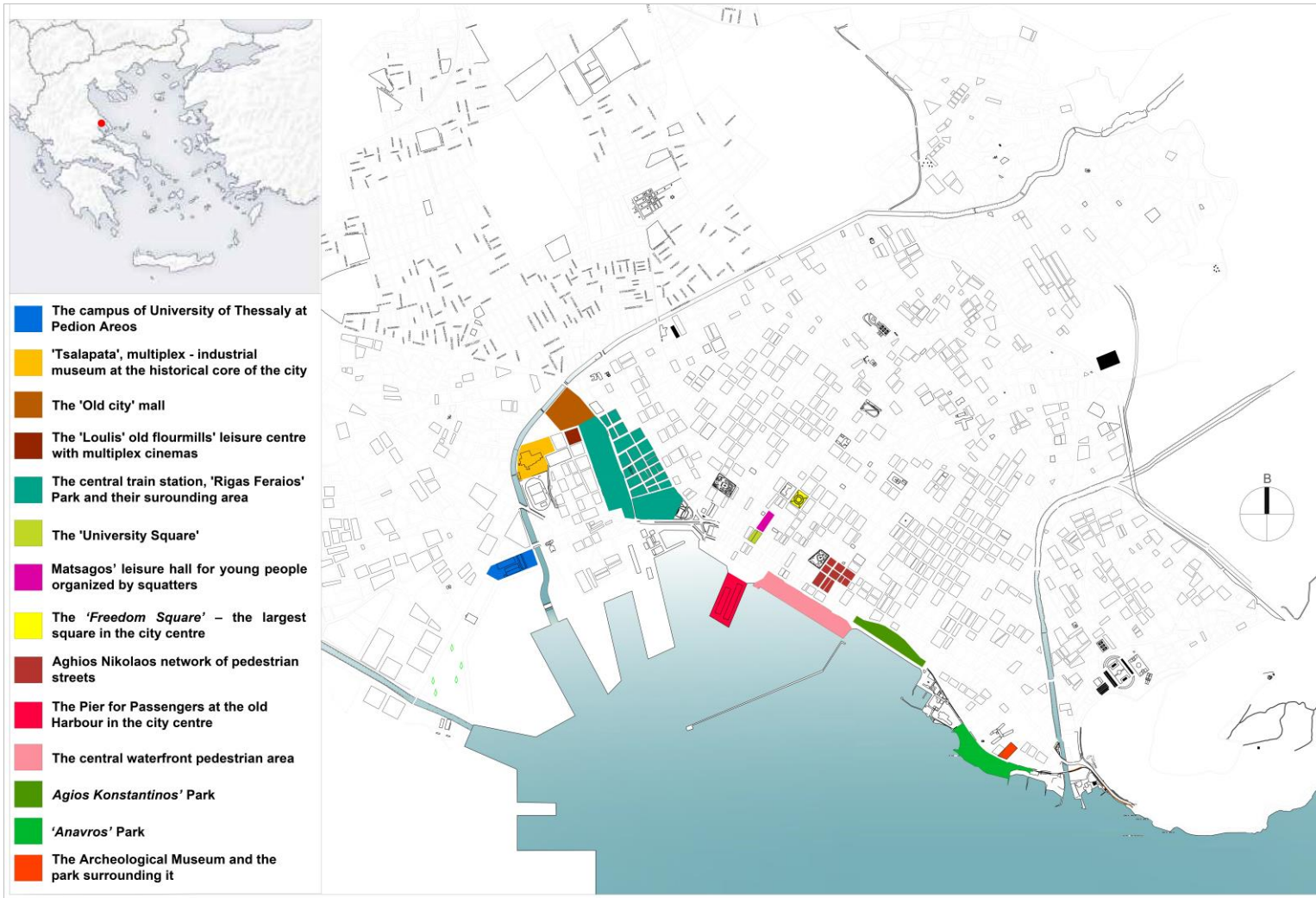
Fig. 11. The city of Volos. The sample of selected public spaces.

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4 THE RESEARCH OUTCOME

Evaluating the city's public spaces

The interviewees were provided with a sample of public spaces (see Table 2) and asked to evaluate them according to the Likert climax from 1 to 5. in terms of <u>the degree of satisfaction of users</u> (see Table 2), The research outcome points that the city's public space provide moderate satisfaction to users, as the total assessment is 3.1, while most of those public spaces with a satisfaction level of 3.5 and more fall into the category of publicly claimed spaces, whereas those public spaces with a satisfaction level of 3.0 and less fall into the categories of lost and neglected spaces.

Table 2. The research sample of public spaces of the city of Volos and the users' evaluation

Public Spaces	1	2	3	4	5	Don't Know	x	St. Dev.	var	cov
'Pedion Areos' Park	8.00%	13.00%	32.00%	20.25%	4.50%	22.25%	3,02	1,04	1,07	34%
'Tsalapata' museum	3.00%	8.50%	21.75%	38.75%	12.50%	15.50%	3,58	0,98	0,96	27%
'Old City' multiplex cinemas	6.50%	13.00%	33.50%	30.50%	9.75%	6.75%	3,26	1,05	1,1	32%
The mall at Loulis' Flour mills	6.25%	8.25%	27.75%	28.75%	14.00%	15.00%	3,44	1,1	1,21	32%
Train Station & - Rigas Feraios Park	12.75%	28.00%	25.25%	11.00%	3.25%	19.75%	2,55	1,04	1,09	41%
Pier for Passenger at the old harbour	11.00%	25.25%	32.75%	14.00%	3.50%	13.50%	2,71	1,02	1,04	38%
Waterfront promenade	1.00%	3.75%	19.00%	41.25%	32.00%	3.00%	4,51	0,88	0,77	19%
Agios Konstantinos Park	1.25%	7.00%	22.75%	40.50%	23.75%	4.75%	3,84	0,93	0,87	24%
Anavros Park	4.50%	13.50%	27.00%	25.25%	11.00%	18.75%	3,3	1,07	1,15	32%
University Squeare	15.50%	18.50%	32.00%	15.50%	5.75%	12.75%	2,76	1,14	1,3	41%
Matsagos leisure hall	45.00%	16.25%	10.75%	5.25%	3.25%	19.50%	1,84	1,14	1,29	62%
The Freedom Square	12.50%	24.75%	32.25%	19.75%	3.50%	7.25%	2,75	1,05	1,11	38%
Agios Nikolaos pedestrian network	2.00%	5.75%	24.25%	41.50%	23.25%	3.25%	3,83	0,94	0,88	25%
The Archeological Museum	11.50%	8.75%	18.50%	14.50%	5.00%	41.75%	2,88	1,23	1,52	43%
The University campus	19.25%	21.00%	30.75%	13.75%	5.00%	10.25%	2,62	1,15	1,31	44%

Investigating the <u>use-density of public spaces</u> and <u>the users' preferences</u> for particular functions and activities in public space (see Table 3), the central waterfront promenade area is on the higher rank, having cafés, bars, restaurants, while the network of pedestrian streets

at *'Aghios Nikolaos'* area accommodating the same functions and activities is not far behind. The lowest use-densities appear in public spaces with libraries, museums etc.

Table 3. The users' preferences for functions and activities in the city's public spaces

Public Space features	1	2	3	x	St. Dev.	var	cov
Waterfront	3.50%	22.00%	74.50%	2,71	0,53	0,28	19%
Roads	1.75%	26.75%	71.50%	2,7	0,5	0,25	18%
Cafés	4.75%	40.25%	55.00%	2,5	0,59	0,35	24%
Pedestrian zones	6.25%	42.00%	51.75%	2,46	0,61	0,37	25%
Beaches	6.25%	47.00%	46.75%	2,41	0,61	0,37	25%
Bars	15.50%	54.75%	29.75%	2,14	0,66	0,43	31%
Parks - Green spaces	18.75%	55.25%	26.00%	2,07	0,67	0,44	32%
Malls - stores	22.50%	55.00%	22.50%	2	0,67	0,45	34%
Cinema - Theatre	26.75%	56.50%	16.75%	1,9	0,65	0,43	34%
Squares	29.75%	56.75%	13.50%	1,84	0,64	0,41	35%
Restaurants	36.50%	53.75%	9.75%	1,73	0,63	0,39	36%
Open and closed sports areas	46.25%	39.00%	14.75%	1,69	0,72	0,51	42%
Libraries	47.50%	41.75%	10.75%	1,63	0,67	0,45	41%
Museum	81.25%	17.50%	1.25%	1,2	0,43	0,19	36%

The users' spatial preferences in cyberspace

Table 4 shows the behavior of a medium user when connected to the internet as well as the characteristics of public space in cyberspace which are most appealing to users. As presented in Table 4, the category of informational spaces, the most densely-used are search engines. In the category of communication spaces and spaces of social interaction, the most popular activities are e-mailing and social networking. In the category of recreation spaces, the most popular are those with online music-radio, and online videos-TV. Finally, regarding consumption spaces, there is low activity in online shopping.

Table 4. The users' spatial preferences in cyberspace

Satisfied needs	Species of public spaces in Cyberspace	Level of Use
Information	1. Online search engines	high
	2. Online press	low
	3. Online libraries	low
	4. Online museums	almost none
Communication/Social Interaction	1. Electronic mail	high
	2. Social networks	high
	3. Online telephony - video calls	low
	4. Blogspots	low
	5. Forums	low
	6. Chatrooms	almost none
Recreation	1. Online music - radio	high
	2. Online TV - videos	high
	3. Online gaming	low
Consumption	1. Online markets	low

Turning onto the degree of user's satisfaction by public facilities in cyberspace, the research outcome is presented in Table 5. The degree of satisfaction is ranked on a scale from 1 to 3. Again the most successful appear to be first the online search engines and second the e-

mailing facility. High in the hierarchy, are spaces and facilities with online music-radio, videos-TV, and video-calls (e.g. skype calls). On the contrary, the users appear to be less satisfied by spaces offering online gaming, markets, museums and chat-rooms.

Table 5. The degree of user's satisfaction by the public facilities in cyberspace

| Cyberspace features/subcategories	1	2	3	x	St. Dev.	var	cov
Online search engines	0.50%	5.00%	94.50%	2,94	0,26	0,07	9%
Electronic mail	5.25%	22.25%	72.50%	2,67	0,57	0,33	21%
Online music - radio	7.75%	24.75%	67.50%	2,6	0,63	0,4	24%
Online TV - videos	7.75%	27.00%	65.25%	2,58	0,63	0,4	25%
Social networks	17.25%	20.00%	62.75%	2,46	0,77	0,59	31%
Online telephony - video calls	12.75%	33.00%	54.25%	2,42	0,71	0,5	29%
Online press	16.25%	46.75%	37.00%	2,21	0,7	0,49	32%
Online libraries	37.50%	40.75%	21.75%	1,84	0,75	0,57	41%
Blogspots	39.50%	42.50%	18.00%	1,79	0,73	0,53	41%
Forums	38.75%	45.00%	16.25%	1,78	0,71	0,5	40%
Online gaming	45.50%	35.75%	18.75%	1,73	0,76	0,57	44%
Online markets	43.25%	41.50%	15.25%	1,72	0,71	0,51	41%
Online museums	75.50%	18.75%	5.75%	1,3	0,57	0,33	44%
Chatrooms	80.00%	12.00%	8.00%	1,28	0,6	0,36	47%

The users' presence in public spaces; comparing the city to Cyberspace

Investigating the users' daily presence in various public spaces, the interviewees were asked to place themselves in one of the following four categories for respectively the city's spaces and cyberspace:
  ➤ 0-2 hours presence daily,
  ➤ 2-5 hours presence daily,
  ➤ 5-7 hours presence daily,
  ➤ more than 7 hours presence daily.

The results of the questionnaire have shown that the absolute majority of interviewees (90%) have internet access at home while only 10% of them have to visit other places daily (school, university, work office, internet cafes, friends, etc) to get access to internet. The results also point that a medium user spends approximately 4.7 hours in the city's public spaces and 4 hours in cyberspace per day. This means that the time the mean user spends daily in cyberspace is 14.89% less than the time he spends in the city's public space. Moreover, the groups of users who are present more than 5 hours per day in public space – whether in the city or in cyberspace – tend to spend relatively more time in the city's public space (see graph in Fig 12). On the contrary, those groups of users who are present less than 5 hours per day in public space – whether in the city or in cyberspace – appear to spend more time in cyberspace. Therefore, there is a reverse relationship between the time the user is present daily in public space and its preference to cyberspace: The longer the public life, the less attractive is cyberspace; and vice versa.

Fig.12. The users' presence in public spaces; comparing the city to Cyberspace.
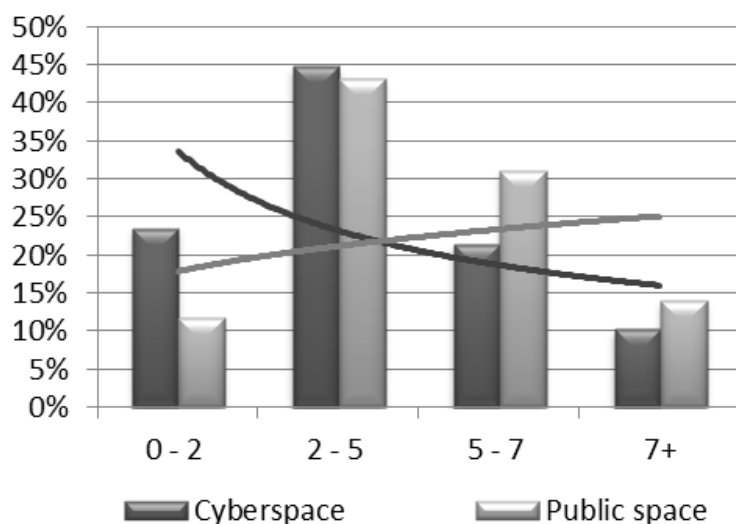
The degree of satisfaction of users' needs; comparing the city to cyberspace

The questionnaire survey also investigated the degree of satisfaction of users' needs (recreation, communication/social interaction, information, consumption) by both the city's public space and cyberspace. The interviewees were asked to rank on a scale from 1 to 5 the degree of satisfaction for respectively recreation, communication/social interaction, information, and consumption by the city and by cyberspace, The research outcome is shown in Table 6.

➢ In terms of <u>information,</u> cyberspace appears to be much better in satisfying the users' needs (53% as opposed to 10.50%).
➢ In terms of <u>communication, social interaction, and recreation</u>, the city's public spaces still provide higher degree of satisfaction to users than cyberspace. More specifically, in the case of communication/social interaction, the city provides the highest degree of satisfaction for 57.50% of the interviewees while cyberspace only 24.75%. In the case of recreation, the city provides the highest degree of satisfaction for 53.75% while cyberspace 13.75%.

**Table 6. The degree of satisfaction of users' needs; comparing the city to cyberspace**

CYBERSPACE									
Needs	1	2	3	4	5	x	St. Dev.	var	cov
Recreation	2.25%	18.00%	35.00%	31.00%	13.75%	3,4	1	1	30%
Communication/Social interaction	3.00%	10.75%	28.00%	33.50%	24.75%	3,7	1,06	1,12	29%
Information	0.50%	2.50%	11.75%	32.25%	**53.00%**	4,4	0,82	0,67	19%
Consumption	40.50%	37.00%	15.00%	5.00%	2.50%	1,9	0,99	0,98	52%
THE CITY'S PUBLIC SPACE									
Needs	1	2	3	4	5	x	St. Dev.	var	cov
Recreation	0.25%	3.00%	10.75%	32.25%	53.75%	4,4	0,81	0,66	19%
Communication/Social interaction	0.75%	2.75%	12.75%	26.25%	57.50%	4,4	0,86	0,74	20%
Information	8.50%	26.25%	31.00%	23.75%	10.50%	3	1,12	1,25	37%
Consumption	5.25%	16.50%	28.75%	30.50%	19.00%	3,4	1,13	1,28	33%

More specifically, although 55% of the interviewees stated that internet has had a positive contribution in the development of their sociality, the city's public spaces are evaluated

higher than those of cyberspace. 92% of them stated that their social relations are still better developing and accelerating in the city's public spaces than in cyberspace. Thus, cyberspace appears to act supplementary - and not competitively - to the city.

The total mean level of satisfaction of each need by the city and by cyberspace is presented by the graph in Fig.13. The difference between the two satisfaction levels is relatively small (about 0.5), with the city exceeding cyberspace.

Fig.13. Total mean of satisfaction levels respectively the city's public spaces and cyberspace
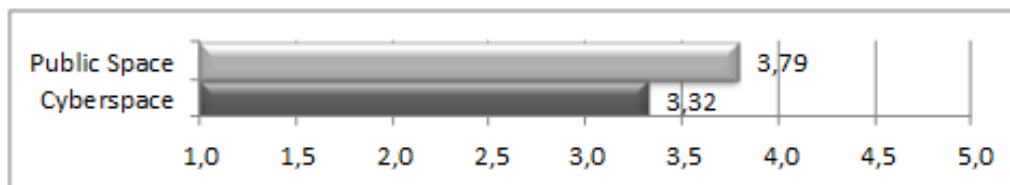
Critical parameters for planning, designing and maintaining public spaces.

The questionnaire survey also investigated the parameters which make public spaces attractive to users in both the city and cyberspace. The results are presented in Table 7.

The design/planning parameters appear to be critical in both the city's public spaces and cyberspace. None of the selected design/planning elements, such as accessibility, attractiveness, variety of uses and activities, readability, interaction between user and space, is found to have a median less than 3. This means that all of them, as expected, have to present at a satisfactory level in order a public space to have at least an average level of use-density, functionality and popularity. More specifically,

  ➤ In the case of cyberspace, the design parameters of accessibility, variety of uses and activities and readability, have found to be the most critical.

  ➤ In the case of cities, the design/planning parameters of accessibility (location, no entry restrictions, no visual physical, or symbolic obstacles), attractiveness (in terms of innovative design), and variety of land uses and activities are the most important parameters for increasing the attractiveness of public spaces.

Regarding other parameters, mainly involving governance and social behaviour, the parameter of security appears to be very important in both cyberspace and the city – especially in the latter.

Table 7. Design elements of public space and cyberspace – Analytical answer percentages

CYBERSPACE									
Design elements	**1**	**2**	**3**	**4**	**5**	**x**	**St. Dev.**	**var**	**cov**
Accesability	0.00%	2.25%	10.25%	28.50%	59.00%	4,4	0,77	0,59	17%
Attractivnes	4.25%	9.25%	29.00%	33.50%	24.00%	3,6	1,07	1,14	29%
Variety of uses and activities	0.25%	3.75%	10.25%	35.00%	50.75%	4,3	0,82	0,67	19%
Readability	0.25%	5.50%	19.75%	45.25%	29.25%	4	0,86	0,74	22%
Interactivity between users and space	5.75%	17.50%	29.50%	28.25%	19.00%	3,4	1,15	1,32	34%
Adjustability	1.25%	9.75%	28.75%	35.50%	24.75%	3,7	0,98	0,96	26%
Cleaning/Maintenance	1.75%	11.75%	27.50%	35.25%	23.75%	3,7	1,02	1,04	28%
Security	6.75%	13.75%	21.50%	21.25%	36.75%	3,7	1,28	1,64	35%

	1	2	3	4	5	x	St. Dev.	var	cov
Adequacy/Sufficiency	1.25%	9.00%	30.25%	37.75%	21.75%	3,7	0,95	0,9	26%
Form	2.75%	6.75%	25.25%	38.75%	26.50%	3,8	1	1	26%

THE CITY'S PUBLIC SPACE									
Design elements	**1**	**2**	**3**	**4**	**5**	**x**	**St. Dev.**	**var**	**cov**
Accesability	0.75%	3.50%	12.25%	27.25%	56.25%	4,4	0,88	0,77	20%
Attractivnes	2.00%	5.75%	19.25%	32.25%	40.75%	4	1,01	1,02	25%
Diversity of uses/activities	1.50%	7.25%	22.00%	32.75%	36.50%	4	1,01	1,02	26%
Readability	4.50%	13.25%	30.50%	31.25%	20.50%	3,5	1,09	1,19	31%
Interactivity between users and space	15.00%	27.25%	29.75%	16.50%	11.50%	2,8	1,21	1,46	43%
Adjustability	13.75%	24.25%	28.00%	20.50%	13.50%	3	1,24	1,54	42%
Cleaning/Maintenance	6.00%	13.50%	20.00%	17.75%	42.75%	3,8	1,29	1,66	34%
Security	7.50%	17.25%	19.25%	14.50%	41.50%	3,7	1,36	1,85	37%
Adequacy/Sufficiency	3.25%	14.50%	26.25%	31.50%	24.50%	3,6	1,1	1,21	31%
Form	6.00%	15.25%	29.00%	22.75%	27.00%	3,5	1,21	1,46	35%

5 CONCLUSIONS

In recent literature, cyberspace is conceived as "a territory of freedom and luck of boundaries" (Stevenson 2007); "the fastest growing territory in all of world history" (Werheim 1997); a field where human needs such as work, recreation, social interaction, information, consumption may be met within new forms of societies (Greinacher 1997); a territory for both public and private expression – an attribute formerly belonging exclusively to the city's public space (Papacharissi 2002). As opposed to arguments enhancing the role of cyberspace (see for instance Papacharissi 2002), our research suggests that there has been a significant shift of public realm from physical space to virtual space. Despite the rapid development of ICT's and the fast growth of cyberspace, cities still represent successful configurations for public realm. In terms of communication, social interaction, and recreation, our research outcome suggests that individuals still prefer the city's public spaces than cyberspace. The latter has gained a top ranked position only as far as information is concerned.

However, cyberspace provides a new "territory" where public sphere can be expanded and developed (Han 2007). In the last decade, we have witnessed radically new social and political behaviour. Young individuals often meet each other first in social networks in cyberspace and then, have face-to-face contacts; Politicians often prefer to make statements in social networks than in the city's public spaces; environmental NGOs like WWF, political movements like the recent Arab Spring have been born and growing in cyberspace - planning their actions in cyberspace and make them happen in the city's public spaces.

Cities have to enhance their public spaces drawing from the attractive features and characteristics of cyberspace. From the point of view of planning and design, our research has pointed certain parameters as critical for increasing the attractiveness and 'liveliness' of public spaces. These are *accessibility* (location, no entry restrictions, no visual physical, or symbolic obstacles), *variety of uses and activities, innovative formal schemes*, and *readability* of space.

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