



Discussion of eParticipation topics in Greek political blogs

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Abstract: Blogs are an effective way to participate in politics and have the potential to support eParticipation. Political discourse is formed through hypertext links, blogrolls, posts and opinionated commentary, calls to political action, and requests for feedback. The paper applies a methodology to locate focal conversational points within the blogosphere. These take shape as central clusters of blogs having many incoming links. Next, the paper investigates the communication patterns among these focal points and associates the findings to the content of blogs participating in these focal points. Through statistical analysis and content analysis it is shown that linkage patterns among focal point blogs are reproduced to content similarities.

Keywords: Political blogs, eParticipation, focal conversation points, cluster analysis, content analysis, hyperlinks

eParticipation describes efforts to broaden and deepen political participation by enabling citizens to connect with one another and with their elected representatives and governments using Information and Communication Technologies (Tambouris, 2007). eParticipation involves from simple information provision to mediation and from consultation and campaigning to voting. Tambouris et al. (2007) defined five levels of e-participation as: eInform, eConsult, eInvolve, eCollaborate and eEmpower. A number of software applications, products, tools and components can be regarded as eParticipation tools. These are: eParticipation Chat Rooms, eParticipation Discussion forum/board, Decision-making Games, Virtual Communities, ePanels, ePetitioning, eDeliberative Polling, eConsultation, eVoting, Suggestion Tools for (formal) Planning Procedures, Webcast, Podcasts, RSS feeds, Wikis, Blogs, Quick polls, Surveys, GIS-tools, Search Engines, Alert services, Online, newsletters, FAQ, Web Portals and LIST SERVS (Tambouris, 2007).

Blogs are becoming one of the most popular media of communication and interaction nowadays (Aragwal & Liu, 2008) increasing people' participation and enhancing discussion on political matters in the public sphere. Drezner & Farrell (2004, p. 5) defined blogs as:

"A web page with minimal to no external editing, providing on-line commentary, periodically updated and presented in reverse chronological order, with hyperlinks to other online sources".

Blogs and generally ICTs change the way people engage in politics (Vatrapu et al., 2008) create, structure and influence political discourse (Lawrence & Dion, 2010) and impact the media and public agenda (Drezner & Farrell, 2004). By definition, blogs link to other sources of information (Zafiroopoulos & Vrana, 2009). They offer links usually to other blogs, to mass media accounts of daily political events, a comment forum associated with each post for visitors to contribute their own commentary and debate with other visitors or the post's author (Lawrence & Dion, 2010). The enhanced features for between-blog interactivity foster dialogue between bloggers promote the creation of social networks among them and fit particularly well to political commentary (Du & Wagner, 2006; Lawrence & Dion, 2010).

eParticipation is a means to empower the political, socio-technological, and cultural capabilities of individuals giving the possibility that individuals can involve themselves and organize themselves in the information society (Fuchs et al., 2006, p. 36).

Taking into consideration: the growing popularity of blogs, the fact that blogs can be connected in virtual communities anywhere anytime (Agarwal et al., 2008), expose readers to new sources of information, add new voices to the political debate, increase political activism (McKenna & Pole, 2004), encourage discussion and dialogue that might not otherwise occur and engage citizens in dialogue with other citizens, blogs are a potential pathway to eParticipation.

1. Importance of Political Blogs

The number of people engaging in explicitly political blogging has increased in recent years following the overall explosion of blogging activity (Wallsten, 2008). Politically oriented blogs emerged after the events of September 11, 2001. People used blogs in order to express their political awareness and their feelings about the terrorist attacks and also to locate information not available in the mainstream media (McKenna & Pole, 2004; Wallsten, 2005).

"The interest within the political sphere on bloggers is that they are a potential alternative to the traditional media as gatekeepers of information and news" (Pedley, 2005, p.295).

Johnson and Kaye (2004) claimed that blogs are viewed, by web users, as a credible source which provided depth and thoughtful analysis, for the reason that blogs are independent from corporate-controlled media (Andrews, 2003; Singer, 2006). There are many situations in which blogs have exercised an important influence over how politics is practiced and policy is developed and supplanted, surpassed and scooped mainstream media (Jackson 2005; Lankshear & Knobel 2003; Scott, 2005; Sroca, 2006).

The ease of using and creating blogs has spawned an explosion of grassroots, bottom-up participation (Gil de Zúñig et al., 2010). Blogs serve as tools for political change and possess a "social-transformative, democratizing potential" (Herring et al., 2004).

"blog communities present avenues for individuals to be part of traditional political participation activities while also providing new online opportunities for the exchange of political perspectives and mobilization into action" (Gil de Zúñig et al., 2010, p.37)

As political blogs offer an easy source of information about political events and opportunities for political action, they act as mobilizers of low costs political participation for the blog's readers. Bloggers can mobilize political action by simply posting information from other sources without any comments or they can argue about particular causes and then suggest their readers to take political action (Wallsten, 2008).

Political parties also use blogs as mobilizers for participation. They diffuse information to internal audiences, build up a volunteer base, mobilize support from their constituency, shape their political

agenda and generate resources (Bloom & Kerbel, 2005 ; Trammell et al. 2006). Blogs have been used as a campaigning instrument in: the 2004 presidential election (Adamic & Glance, 2005; Bloom & Kerbel, 2005), the 2005 U.K. general election (Coleman & Ward, 2005 ; Jackson, 2006), the 2005 Danish parliamentary election (Klastrup & Pedersen, 2007), the 2005 New Zealand general election (Hopkins & Matheson, 2005), the 2005 German Bundestag election (Albrecht et al., 2007), the 2007 French election (Arnold, 2007), the 2007 Australian Federal Election (Macnamara, 2008), the 2008 presidential elections in the USA (Edelman, 2009).

Blogs have also raised money for candidates in elections: Howard Dean's blog mobilized supporters and funding (Kerbel & Bloom, 2005). In Ohio Paul Hackett lost in elections to the Republican Jean Schmidt, his contests had been far more competitive than expected (Glover, 2006). In South Dakota politics, Thune's campaign was paid by bloggers (Glover, 2006). In the 2008 presidential elections in the USA, MyBO Web site and blog were used as a hub for raising the money (Edelman, 2009).

2. Features enhancing eParticipation

Internet's level of interactivity along with the proliferation of alternative channels may exemplify the new forms of political participation (Gennaro and Dutton, 2006). Political blogs form political discourse and participation through hypertext links, blogrolls, posts and opinionated commentary, calls to political action, and requests for feedback (McKenna & Pole, 2004; Wallsten, 2008).

A "blogroll" is a list of blogs that many bloggers maintain for regular navigation and frequent visits to linked blogs. Blogrolls evolved early in the development of blogs and help to find other blogs with similar interests (Marlow, 2004). In this vein, the blogroll can be regarded as indicative of the communication networks of the blogger (Park and Jankofski, 2008). The blogroll occupies a permanent position on the blog's home page and is the list of blogs that the blogger frequently reads or especially admires and thus offers links to these blogs (Marlow, 2004).

Political discourse and information exchange in the blogosphere can also be achieved by posts commenting on posts (Drezner & Farrell, 2004; Mishne & Glance, 2006). Comments are reader-contributed replies to a specific post within the blog (Marlow, 2004). In that way bloggers can connect their own ideas with those of others (Brady, 2005). According to Wallsten (2008) political bloggers spend most of their time responding to the arguments made by other political bloggers and link primarily to bloggers who share their ideological predispositions (Adamic & Glance, 2005).

Interactivity between blogs can be also achieved by trackbacks and pingbacks. Trackback is a citation notification system (Brady, 2005). Trackbacks enables bloggers to determine when other bloggers have written another entry of their own that references their original post.

"If both weblogs are enabled with trackback functionality, a reference from a post on weblog A to another post on weblog B will update the post on B to contain a back-reference to the post on A" (Marlow, 2004).

A pingback is an automated trackback. Pingbacks support auto-discovery where the software automatically finds out the links in a post, and automatically tries to pingback those URLs, while trackbacks must be done manually by entering the trackback URL that the trackback should be sent to (http://codex.wordpress.org/Introduction_to_Blogging#Pingbacks).

There are millions of individual blogs, but only a few blogs attract a large readership (Wagner & Bolloju, 2005) and the most discussions of the blogosphere focus on this elite minority of blogs (Herring et al., 2004). These blogs are the most known and regularly linked by others. Their authors manage to create a persona, making themselves a celebrity among the community of bloggers (Trammell & Keshelashvili, 2005). These blogs are referred as "A-list." blogs, are

predominantly filter-type blogs, often with a political focus (Herring et al., 2005). In a given a political situation, with a look at the top blogs a “summary statistic” about the distribution of opinions can be obtained (Drezner & Farrell, 2004).

The median blogger has almost no political influence as measured by traffic or hyperlinks. In order to influence the news, political and policy agenda, bloggers need to attract an “A” list audience to their blogs (Jackson, 2006). The most reliable way for a blogger to gain traffic to his/her blog is through a link on another focal point blog (Blood, 2002; Drezner & Farrell, 2004).

This paper investigates the formation of “A- list” political blogs in Greece. After locating such blogs, the paper studies the content of these blogs regarding eParticipation topics.

3. Methodology

The paper applies a methodology for locating central blog groups which might serve as “focal points” of conversation. It uses Technorati.com to record Greek political blogs and with tags to the five Greek parliamentary parties. The five parliamentary Greek parties are: Pan-Hellenic Socialist Movement (PASOK), which was the government party at the time that this paper was written, New Democracy (ND) - the Christian Democratic party, the Communist Party of Greece (KKE), Coalition of the Left and Progress (SYRIZA) and People’s and the Orthodox’s Rally (LAOS) a right wing party which is mainly characterized by nationalist and populist rhetoric.

Through the search, 101 blogs with «some authority» were found. According to Technorati.com, authority is the number of blogs linking to a website in the last six months. The higher the number, the more Technorati Authority the blog has. In the authors view, this consideration grants greater validity concerning blogs selection because the analysis takes into consideration only the blogs which are present and active for a while and probably are considered reliable.

Next, the paper studies incoming links between blogs through their blogrolls. The blogs and their connections are associated with a directed graph. The directed graph, which presents the social network of blogs, is associated with its adjacency matrix. An adjacency matrix is a square non-symmetric binary data matrix where unity is placed in cell ij if blog i links to blog j through the blogroll, or else a zero is placed in the cell. The study uses a method for locating central blog groups in political blogging (Zafiroopoulos & Vrana 2009, 2010). The original idea is that political blogs are organized around central focal point blogs, where most of the informative conversation is taking place (Drezner & Farrell, 2004). Zafiroopoulos & Vrana (2009, 2010) introduced a combination of social networking theory, Multidimensional Scaling and Cluster Analysis to locate such groups by studying incoming links through blogrolls. By finding such groups, one can explore how bloggers are organized.

Multidimensional Scaling (MDS) is used as a data reduction technique on the one hand and to quantify the original binary data on the other. The method reproduces the original data and maps them on fewer dimensions of space (namely two in this analysis) while the effort is to keep intact the distances among the original data on the new reproduced data. “Stress” is a measure of goodness of fit between distances of original data and distances of the reproduced data. Better fit is assumed when stress is close to zero.

Hierarchical Cluster Analysis (HCA) uses the quantified data from MDS to produce clusters of blogs, which have similar properties. Blogs in the same cluster are linked nearly simultaneously by some of the 101 blogs. So in this way the blogs in a formed cluster are regarded to have common characteristics or be of the same family, by blogs who link them. Some of the clusters that are produced by HCA, gather the largest number of incoming links. If this happens then they may serve as conversational focal points.

Next, the paper studies the affiliation and linkage properties of these central clusters while through a content analysis it represents how these central blogs, organized in clusters, discuss certain eParticipation areas and topics. Findings are expected to demonstrate possible associations among eParticipation topics content with inter-cluster interconnection properties.

4. Findings

Multidimensional Scaling presents very good fit with Stress equal to 0.07. Hierarchical Cluster Analysis (HCA) produces five clusters regarding the incoming links. To decide the optimal number of clusters a scree-plot of number clusters versus Wilk's Lambdas is used.

Table 1 presents the five clusters. Cluster 1 contains more than 60% of the blogs. Although it is the most populous cluster, it presents the lowest rate of incoming links. Thus, the cluster contains the least active blogs regarding networking. Regarding the other clusters, there is a strong negative correlation between cluster size and percentage of incoming links. The more we move towards clusters 5, the more the average incoming link rate is and the lower the size of the cluster becomes. Leaving out cluster 1, we could limit our analysis to and comment on the rest of the four clusters, those that have many incoming links and yet, are still small size at the same time. In particular clusters 3, 4, and 5 on average, receive more than 9 incoming links. Because the recorded blogs are 101 this number can be directly interpreted as being a percentage of nearly 9%. Further, the most linked cluster consists of just four blogs and has an average of 10.7 of all incoming links.

Regarding the tags of the blogs within each cluster, cluster 2 presents a high rate of tagging to the Communist Party of Greece (KKE) and SYRIZA, since 72.2% of the blogs within the clusters have tags to KKE while 50% of the blogs tag to SYRIZA. It is a group of blogs maintained mainly by leftists with references to KKE and SYRIZA. Cluster 3 tags mainly PASOK and it keeps tagging to the other parties very low. Blogs in this cluster are maintained by members and friends of PASOK. Clusters 4 and 5 have high rates of tags to PASOK, ND and SYRIZA, while 50% of blogs in cluster 5 tag to KKE. These clusters are formed of blogs, which provide information argumentation, and speculation about society, and digital liberties (Table 2). It is very interesting to note that the frequency of blogs with a Right wing affiliation is almost nil (Table 2).

Table 1. Clusters' properties.

Clusters	1	2	3	4	5
Frequency	62	18	8	9	4
Percentage	61.4%	17.8%	7.9%	8.9%	4.0%
Incoming links (average)	2.8	6.2	9.3	9.5	10.7
Tags to PASOK	56.5%	44.4%	75.0%	66.7%	75.0%
Tags to ND	58.1%	44.4%	37.5%	77.8%	75.0%
Tags to SYRIZA	35.5%	50.0%	12.5%	77.8%	75.0%
Tags to KKE	32.3%	72.2%	25.0%	33.3%	50.0%
Tags to LAOS	24.2%	22.2%	12.5%	33.3%	25.0%

Table 2. Clusters' profiles and affiliation.

Cluster 2	Mainly Left, KKE and SYRIZA
Cluster 3	PASOK
Cluster 4	Left with broader speculation about society and democracy
Cluster 5	Left, digital liberties, information provision, discussion and argumentation

5. Linkage properties among central blog groups

This section examines inter-linked properties of the four most central clusters of blogs. Studying incoming links among central blog clusters provides a means of understanding whether there is a flow of information among them. On the other hand it could reveal how isolated they are. The actual number of links between clusters i and j is calculated and recorded in a matrix. Cell i,j of this matrix contains the number of incoming links from cluster i to cluster j . These numbers are divided by the maximum number of links between the specific clusters. This maximum number equals $n \cdot m$ where n stands for the number of blogs for the one cluster and m the number of blogs clusters of the other. The outcomes are presented as percentages. These are indexes of interconnection degree between clusters of blogs. The diagonal elements of this final product matrix are not of the essence at this point. Table 3 contains the outcomes of these calculations. The number in any cell i,j denotes the percentage of incoming links to cluster j from cluster i .

Cluster 3 has high links percentages to and from clusters 4 and 5. Cluster 2 links percentages to clusters 4 and 5 both equal 11% and incoming links percentage from cluster 4 to cluster 2 equals 12%. It is a more isolated cluster of blogs. This cluster which contains blogs affiliated mostly to KKE and SYRIZA, has few ties to other clusters. Cluster 4 presents good ties (links percentages) to clusters 2, 3, and 5. Its links percentages to and from cluster 5 are very high, 25% and 22% respectively. Clusters 4 and 5 are really well connected. This property might be associated with the fact that they share common believes and ideas. Cluster 5 looks very similar to cluster 4, regarding percentages of incoming links. However, it differs from cluster 4 in the sense that while cluster 2 links fairly well to cluster 5, cluster 5 does not link to cluster 2 (1%). Blogs in cluster 2 might regard blogs of cluster 5 as interesting or being politically close to them, but the opposite does not seem to hold.

In conclusion, clusters 4 and 5 present the highest degrees of interconnections or ties. They both are fairly well connected to cluster 3, but compared to it they have half of its internal coherence. Clusters 3, 4 and 5 form a larger extended cluster of smaller connected clusters. Cluster 2 has some sparse connections to clusters 3, 4, and 5 and seems to be isolated from the other clusters.

Table 3. Percentages of incoming links with respect to the maximum number of incoming links between clusters.

Clusters	2	3	4	5
2		4%	11%	11%
3	2%		18%	16%
4	12%	13%		25%
5	1%	13%	22%	

6. Investigating common properties of central blogs

Content analysis is used for the investigation of the eParticipation topics discussed in the central clusters' blogs using the NVIVO 8 Content Analysis software tool. The data content is chosen to be the written content included in the 39 blogs in the central cluster. For each blog, the following features were recorded in the content body:

The main title of the blog along with a summarized description. This description is usually given underneath the title, from the Blog logo or it can be copied from the Blog script (it is usually a description that appears as a title on the upper part of the browser window when visiting a page).

The "about" part of each blog (when applicable) is where the scope of the blog is given, the motivation of the blogger to create it etc. Usually there is also information concerning the blogger, such as his/her interests, her/his aims, her/his academic background and her/his political beliefs.

The main part of this analysis, the posts of the political blogs, including the title of each post, its main body followed by its' comments. Obviously this content can be huge. Additionally, it is dynamic due to the nature of a blog itself. For this reason the analysis has unavoidably involved sampling, in order to form the final content body from the corpus. In order to remove much of the subjectivity of the analysis, the sample size was decided according to the following sampling plan: all posts from a certain period of time were collected where this time window was dynamically specified in a way that includes:

a) content that qualitatively includes most of the posts that deal with the scope that a certain blog serves (the posted topics were found mostly to recur after a certain period of time and usually no new topics are discovered in a political blog after a while).

b) approximately the same data amount in terms of media content units from all blogs.

In frequently updated blogs this period of time can be a month whereas in less frequently updated blogs we may have to examine posts from 6 months or more. It all has to do with the rate the blogger updates his/her content as well as his/her will to alter the topics that he/she deals with.

Following the above described procedure, a representation of each blog source material was formed, and a set of all these content bodies was used in NVIVO. Statistically speaking, it is probable that during the sample process some content of a blog was left out of the sample (e.g. a post in the past whose topic was unique and a reference to this topic has been never posted again). But in this investigation, this probability is kept low, mainly because in a political blog, usually the blogger has a clearly defined purpose which is seldom altered as time passes by.

For this study, the units of the media content were decided to be words or phrases. Synonyms or small phrases were grouped together for the purpose of this investigation. This analysis looked for specific areas of interest over which discussions are occurring among the several blogs through their posts/comments in all 39 blogs of the 4 identified clusters.

The analysis identified 12 main areas of interest relevant to "politics" that source material of a political blog may belong to. These areas of interest (named topics from now on) are given in the Table 4.

Table 4. eParticipation topics in focal conversational points.

		Average percentages of blog relevance to the specific topic, within clusters			
		2	3	4	5
1	Campaigning Protest, lobbying, petitioning and other forms of collective action (except of election campaigns, see electioneering as topic)	27	34.3	27.4	18.1
2	Community building / Collaborative Environments To promote individuals come together to form communities, to progress shared agendas and to shape and empower such communities.	34.1	33.2	10.9	4
3	Consultation Official initiatives by public or private agencies to allow stakeholders to contribute their opinion, either privately or publicly, on specific issues.	0	31.2	30.7	40.9
4	Deliberation To support virtual, small and large-group discussions, to express thoughts or ideas, to comment on or criticize, allowing reflection and consideration of issues.	35.9	16.5	38.6	17.3
5	Discourse To support analysis and representation of discourse.	23.2	11.3	18.4	7
6	Electioneering To support politicians, political parties and lobbyists in the context of election campaigns.	9.4	7.1	8.1	12.1
7	Information Provision To structure, represent and manage information in participation contexts.	34.6	39.7	40.2	41.9
8	Mediation To resolve disputes or conflicts in an online context.	23.7	0	25.2	25.2
9	Polling To measure public opinion and sentiment.	3	0	2.1	12.8
10	Concern creation To make an impression about a fact/set of ideas and cause further uncertainty or suspicion	37.1	16.3	8.8	42
11	Media and book reference References to web sites, magazines, newspapers etc as well as books	25.1	19.6	27.4	24.5
12	Environmental issues References to environmental topics	5.6	1	3.4	1.5

The average number of topics covered per cluster is: cluster2 56%, cluster3 58.3%, cluster4 57.4%, cluster5 62.5%. Information provision characterises 37 blogs of the 4 clusters making it the most popular topic, followed by Campaigning, Electioneering and Concern Creation. Table 4 presents the average percentages of relevance to the 12 topics within each one of the four

clusters. For each blog the analysis finds the percentage of occurrence of each topic throughout all the announcements of the blog. Next, the average percentage for each cluster is calculated.

From Table 4 it can be seen that relative to the rest of the clusters, cluster 2 presents high percentages in Community building, Deliberation, Discourse, Concern creation, and it presents no activity regarding Consultation. Cluster 3 presents high percentages, relative to the rest of the clusters, in Campaigning, in Community Building, and no activity in Mediation. Cluster4, relative to the rest of the clusters, presents high percentages in Deliberation, and in Discourse. Finally, Cluster 5 relative to the rest of the clusters presents high percentages in Polling, and in Concern creation, while it presents small percentages in Campaigning, Community Building, and Discourse. Overall, topics that have high relevance percentages are Information Provision, and to a small percentage Media and book issues. On the other hand, Electioneering, Polling, and Environmental issues are placed at the last seats of the topics list.

7. Associations between clusters' inter-linkage and content

Correspondence Analysis is a technique that allows for a holistic representation of the data of Table 4. The four clusters of interest are presented as four points in a common space along with the twelve topics, which are also presented as points. In the case that, two points, one representing a cluster and the other representing a topic, are in a similar vicinity this means that the specific topic is discussed to a high degree (percentage) in that specific cluster, according to Table 4. Thus, it becomes easy to follow which topics are discussed by which clusters. Consequently clusters which are close together present similar percentages for some topics, those close to the clusters. So nearby clusters discuss specific topics to nearly the same degree.

The four clusters are presented in a two dimensional common space, having two coordinates each. In this vein performing a new cluster analysis can provide a picture of the four original clusters. Clusters which are close together may form new wider clusters, Figure 1a, 1b. It becomes obvious that clusters 4 and 5 are grouped together to form a new cluster, while cluster 3 enters at the next step. Thus, considering the discussion topics, clusters 4 and 5 are quite similar and this similarity may next be expanded to cluster 3. This finding is of the essence because it can be associated with the findings of Table 3, which presents the interconnections properties of the four central clusters. As shown in Table 3 clusters 4 and 5 are indeed highly inter-linked according to incoming links and cluster 3 follows. Figure 1c presents the social network of the five original clusters according to the percentages of connection given in Table 3, big arrow heads represent high percentages. It becomes rather straightforward then to argue that hyperlinks interconnectedness is associated with topics discussion. This means that connected clusters also present thematic similarities, or alternatively inter-linkage is reproduced for similar topics among the four clusters. There is an association between clusters' inter-linkage and clusters' content.

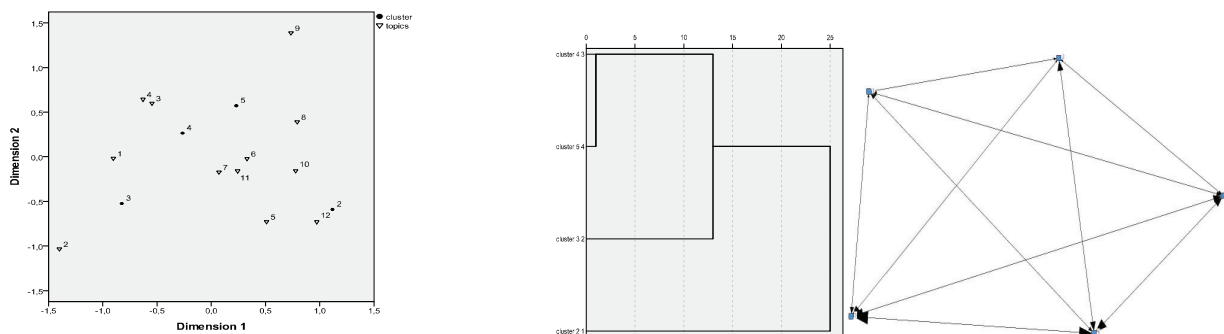


Figure 1. From left to right: a) correspondence analysis common space of clusters and topics, b) clusters dendrogram, c) clusters of blogs network according to incoming links.

8. Conclusions

The paper proposed a twofold methodology, first to locate central focal point blogs, and second to explore the association of these central focal points hyperlinks interconnections with their content similarity. Greek political blogs are organized around central blog groups. Furthermore there is strong evidence that these groups present similarities in terms of their linkage and at the same time they present similarities regarding eParticipation topics and areas of discussion. This paper adds to the understanding of political blogs communication patterns and the connection of them to eParticipation discussion areas.

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